

**STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD**

**In the Matter of Water Quality Certification for the
PACIFIC GAS AND ELECTRIC COMPANY AND CITY OF SANTA CLARA
BUCKS CREEK HYDROELECTRIC PROJECT
FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 619**

**Sources: Bucks Creek, Grizzly Creek, Milk Ranch Creek, and Unnamed
Milk Ranch Creek tributaries**

County: Plumas

WATER QUALITY CERTIFICATION FOR FEDERAL PERMIT OR LICENSE

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Attachment

Attachment A - Detailed Project Description

Common Acronyms and Abbreviations

<i>ac-ft</i>	<i>acre-feet</i>
<i>msl</i>	<i>Above mean sea level</i>
<i>AW</i>	<i>American Whitewater</i>
<i>BMI</i>	<i>benthic macroinvertebrates</i>
<i>CDFW</i>	<i>California Department of Fish and Wildlife</i>
<i>CEQA</i>	<i>California Environmental Quality Act</i>
<i>CRLF</i>	<i>California red-legged frog</i>
<i>CSPA</i>	<i>California Sportfishing Protection Alliance</i>
<i>CWA</i>	<i>Clean Water Act</i>
<i>cfs</i>	<i>cubic feet per second</i>
<i>Deputy Director</i>	<i>Deputy Director of the Division of Water Rights</i>
<i>DLA</i>	<i>Draft License Application</i>
<i>ESA</i>	<i>Endangered Species Act</i>
<i>EA</i>	<i>Environmental Assessment</i>
<i>EIR</i>	<i>Environmental Impact Report</i>
<i>EIS</i>	<i>Environmental Impact Statement</i>
<i>FERC</i>	<i>Federal Energy Regulatory Commission</i>
<i>FPA</i>	<i>Federal Power Act</i>
<i>FYLF</i>	<i>foothill yellow-legged frog</i>
<i>FLA</i>	<i>Final License Application</i>
<i>IS</i>	<i>Initial Study</i>
<i>LWD</i>	<i>large woody debris</i>
<i>MIF</i>	<i>minimum instream flow(s)</i>
<i>MND</i>	<i>Mitigated Negative Declaration</i>
<i>NEPA</i>	<i>National Environmental Policy Act</i>
<i>NF</i>	<i>National Forest</i>
<i>NMFS</i>	<i>National Marine Fisheries Service</i>
<i>NPDES</i>	<i>National Pollutant Discharge Elimination System</i>
<i>ND</i>	<i>Negative Declaration</i>
<i>REA</i>	<i>Notice of Application Ready for Environmental Analysis</i>
<i>Regional Board</i>	<i>Regional Water Quality Control Board</i>
<i>SNYLF</i>	<i>Sierra Nevada yellow-legged frog</i>
<i>State Water Board</i>	<i>State Water Resources Control Board</i>
<i>BLM</i>	<i>United States Bureau of Land Management</i>
<i>USEPA</i>	<i>United States Environmental Protection Agency</i>
<i>USFWS</i>	<i>United States Fish and Wildlife Service</i>
<i>Forest Service certification</i>	<i>United States Forest Service water quality certification</i>

1.0 Project Background and Description

1.1 Project Background

The Bucks Creek Hydroelectric Project (Project), Federal Energy Regulatory Commission (FERC) Project No. 619 is located in the North Fork Feather River watershed in Plumas County, California. The Project is jointly owned by Pacific Gas and Electric Company (PG&E) and the City of Santa Clara (Santa Clara).

In 1925, the Federal Power Commission (predecessor to FERC) issued a license to the Feather River Power Company for construction and operation of the Bucks Creek Development. In 1928, the Bucks Creek Development was completed and acquired by the Great Western Power Company. Subsequently, the Bucks Creek Development was acquired by Pacific Gas and Electric Company (PG&E) in 1930. In 1988, FERC issued the Grizzly Amendment, which authorized the construction, operation, and maintenance of the Grizzly Development that was completed in 1993. In 1988, Santa Clara became a joint licensee for the Project with PG&E.

1.2 Project Description

The Project has an authorized installed capacity of 84.8 megawatts. About half of the Project facilities are located on federal land in the Plumas National Forest and almost all of the remaining land is owned by PG&E. Private landowners own approximately 7.5 acres of land in the Project boundary. The Project is comprised of two developments: (1) Bucks Creek Development; and (2) Grizzly Development.

The major components of the Bucks Creek Development include Bucks Lake Dam, Bucks Lake Reservoir, Bucks Creek Penstocks, Bucks Powerhouse and Switchyard, Three Lakes Dam, Three Lakes (i.e., Lower Lake, Middle Lake, and Upper Lake), Milk Ranch Conduit, Lower Bucks Lake Dam, Lower Bucks Lake, Grizzly Forebay, Grizzly Forebay Dam, and Grizzly Forebay Tunnel. The major components of the Grizzly Development include the Grizzly Powerhouse Tunnel and the Grizzly Powerhouse¹. A detailed description of the Project facilities can be found in Attachment A.

Water generally flows through the Project as follows:

- The Project impounds Bucks Creek to create Bucks Lake, which is 105,605 acre-feet (ac-ft) at its normal maximum water surface elevation. From Bucks Lake, water is discharged immediately downstream into a short reach (approximately 0.25-mile) of Bucks Creek before flowing into Lower Bucks Lake. Lower Bucks Lake has gross storage of 5,843 ac-ft.

¹ Prior to construction of the Grizzly Development, water from Lower Bucks Lake was conveyed into Grizzly Forebay via the now operationally abandoned Lower Bucks Lake Tunnel located along Grizzly Creek. The Lower Bucks Lake Tunnel remains a Project facility under the current FERC license.

- Three Lakes Dam impounds Milk Ranch Creek and diverts water into the Milk Ranch Conduit, which also discharges into Lower Bucks Lake.
- Water is conveyed from Lower Bucks Lake to the Grizzly Powerhouse and then discharged into Grizzly Forebay.
- Grizzly Forebay, with gross storage of 1,112 ac-ft, also impounds Grizzly Creek before the water is diverted into the Grizzly Forebay Tunnel (maximum flow capacity of 400 cfs), which discharges into Bucks Powerhouse.
- Water is discharged from Bucks Powerhouse into the North Fork Feather River.

1.3 Water Rights

Table A lists the water rights held by PG&E and Santa Clara for the Project.

Table A. Water Rights Held by PG&E and Santa Clara for the Project

Water Right Application Number	Priority Date	Storage (ac-ft)	Direct Diversion (cfs)	Season of Use	Type of Use	Source
A002186	2/1/1921	70,000	N/A	Oct 1 to Jul 1	Irrigation	Bucks Creek
A003889	3/6/1924	23,000	N/A	Nov 1 to Jul 1	Power	Bucks Creek
A004441	2/2/1925	40,000	N/A	Nov 1 to Jul 2	Power	Bucks Creek
A004453	2/10/1925	736	N/A	Jan 1 to Jun 15	Power	Milk Ranch Creek
A004491	3/5/1925	N/A	175	Year Round	Power	Bucks Creek
A004598	5/22/1925	N/A	105	Year Round	Power	Grizzly Creek
A004871	12/21/1925	N/A	20	Year Round	Power	Grizzly Creek
A005997	7/27/1928	N/A	2.25	Year Round	Industrial	Muir Creek
A006241	4/8/1929	N/A	65	Year Round	Power	Tributary to Milk Ranch/Bucks Creek
A011192	10/25/1945	N/A	0.18	Year Round	Domestic	Tributary to Bucks Lake
A029797	8/17/1990	N/A	400	Year Round	Power	Bucks Creek
A031499	4/5/2004	38,082	234	Year Round	Power	Grizzly Creek
A002195	2/10/2021	55,000	N/A	Dec 1 to Jul 1	Power	Bucks Creek

2.0 Federal Energy Regulatory Commission Proceedings

The original license for the Project was issued by FERC on April 14, 1926 and expired on December 31, 1968. A second license for the Project was issued on December 19, 1974 and was originally set to expire on October 31, 2004. On April 29, 1988, FERC issued an Order Amending License (known as the Grizzly Amendment) that authorized construction, operation, and maintenance of the Grizzly Development and extended the Project's license term to December 31, 2018. Although Santa Clara financed its construction, PG&E operates the Grizzly Development along with the Bucks Creek Development. On July 10, 1990, FERC issued an Order Approving a Settlement Agreement between PG&E and Santa Clara, which added Santa Clara as a joint licensee for the Project. In 2006, the license was amended to include minimum instream flows in parts of Bucks Creek and Grizzly Creek. Since 2006, PG&E has operated the Project as required by the second license (1974), Grizzly Amendment (1988), and 2006 amendment. The second license expired on December 31, 2018. By letter dated December 12, 2018, FERC authorized the Project to operate under an annual license until FERC acts on the application for a subsequent license.

On December 12, 2016, PG&E and Santa Clara filed their final license application for a new license with FERC for the Project. PG&E and Santa Clara subsequently filed an updated application for a new license on May 22, 2018, and an errata to that update on July 27, 2018. FERC issued a draft environmental impact statement (EIS) for the Project on June 14, 2019. FERC issued the Final EIS for the Project on January 28, 2020.

3.0 Regulatory Authority

3.1 Water Quality Certification and Related Authorities

The federal Clean Water Act (33 U.S.C. §§ 1251-1387) was enacted "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." (33 U.S.C. § 1251(a).) Section 101 of the Clean Water Act (33 U.S.C. § 1251(g)) requires federal agencies to "co-operate with the State and local agencies to develop comprehensive solutions to prevent, reduce and eliminate pollution in concert with programs for managing water resources."

Section 401 of the Clean Water Act (33 U.S.C. § 1341) requires every applicant for a federal license or permit which may result in a discharge into navigable waters to provide the licensing or permitting federal agency with certification that the project will be in compliance with specified provisions of the Clean Water Act, including water quality standards and implementation plans promulgated pursuant to section 303 of the Clean Water Act (33 U.S.C. § 1313). Clean Water Act section 401 directs the agency responsible for certification to prescribe effluent limitations and other limitations necessary to ensure compliance with the Clean Water Act and with any other appropriate requirements of state law. Section 401 further provides that certification conditions shall become conditions of any federal license or permit for the project. The State Water Resources Control Board (State Water Board) is the state agency

responsible for such certification in California. (Wat. Code, § 13160.) The State Water Board has delegated authority to act on applications for certification to the Executive Director. (Cal. Code Regs., tit. 23, § 3838, subd. (a).)

Water Code section 13383 provides the State Water Board with the authority to “establish monitoring, inspection, entry, reporting, and recordkeeping requirements... and [require] other information as may be reasonably required” for activities subject to certification under section 401 of the Clean Water Act that involve the diversion of water for beneficial use. The State Water Board delegated this authority to the Deputy Director of the Division of Water Rights (Deputy Director), as provided for in State Water Board Resolution No. 2012-0029 (State Water Board, 2012). In the *Redelegation of Authorities Pursuant to Resolution No. 2012-0029* memo issued by the Deputy Director on October 19, 2017, this authority is redelegated to the Assistant Deputy Directors of the Division of Water Rights (State Water Board, 2017).

PG&E and Santa Clara filed an application for water quality certification (certification) with the State Water Board on August 14, 2018. State Water Board staff provided public notice of the application pursuant to California Code of Regulations, title 23, section 3858, by posting information describing the Project on the State Water Board's website on August 22, 2018. The State Water Board denied the 2018 application for certification on August 13, 2019, and PG&E and Santa Clara submitted a new application for certification on October 23, 2019.

On October 14, 2020, State Water Board staff requested comments from the Central Valley Regional Water Quality Control Board (Central Valley Regional Water Board) on the draft certification. (See Cal. Code Regs., tit. 23, § 53855, subd. (b)(2)(B).) On October 16, 2020, the Central Valley Regional Water Board responded with no comments.

3.2 Water Quality Control Plans and Related Authorities

The State Water Board's certification for the Project must ensure compliance with the water quality standards in the Central Valley Regional Water Board's *Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin* (**Basin Plan**) (Central Valley Regional Board, 2018). Water quality control plans designate the beneficial uses of water that are to be protected (such as municipal and industrial, agricultural, and fish and wildlife beneficial uses), water quality objectives for the reasonable protection of the beneficial uses and the prevention of nuisance, and a program of implementation to achieve the water quality objectives. (Wat. Code, §§ 13241, 13050, subds. (h), (j).) The beneficial uses, together with the water quality objectives contained in the water quality control plans, and applicable federal anti-degradation requirements, constitute California's water quality standards for purposes of the Clean Water Act.

The nine California Regional Water Quality Control Boards (Regional Water Boards) have primary responsibility for the formulation and adoption of water quality control plans for their respective regions, subject to State Water Board and United States

Environmental Protection Agency (USEPA) approval, as appropriate. (Wat. Code, § 13240 et seq.) The State Water Board may also adopt water quality control plans, which will supersede regional water quality control plans for the same waters to the extent of any conflict. (*Id.*, § 13170.)

The Central Valley Regional Water Board adopted, and the State Water Board and the USEPA approved, the Basin Plan (Central Valley Regional Water Board, 2018). The Basin Plan identifies existing beneficial uses for the North Fork Feather River watershed as: municipal and domestic supply; hydropower generation; water contact recreation; non-contact water recreation; canoeing and rafting; cold freshwater habitat; spawning, reproduction, and/or early development of aquatic organisms (cold); and wildlife habitat (Central Valley Regional Water Board, 2018). The beneficial uses of any specifically identified water body generally apply to its tributary streams as well (Central Valley Regional Water Board, 2018).

In March 2019, the State Water Board submitted to FERC the plans and policies included in the State's comprehensive plan for orderly and coordinated control, protection, conservation, development, and utilization of the water resources of the State. The submission includes the Basin Plan.

3.3 Construction General Permit

PG&E and Santa Clara may need to obtain coverage under the State Water Board's National Pollutant Discharge Elimination System (NPDES) *General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit)*² and any amendments thereto. Coverage under the Construction General Permit may be required for activities that disturb one or more acres of soil, or that disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres. Construction activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground such as stockpiling or excavation but do not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

3.4 Aquatic Weed Control General Permit

The *Statewide National Pollutant Discharge Elimination System Permit for Residual Aquatic Pesticide Discharges to Waters of the United States from Algae and Aquatic*

² Water Quality Order No. 2009-0009-DWQ and NPDES No. CAS000002, as amended by Order No. 2010-0014-DWQ, Order No. 2012-0006-DWQ, and any amendments thereto. Available online at: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html Last Accessed October 15, 2020.

*Weed Control Applications (Aquatic Weed Control General Permit)*³ applies to projects that require aquatic weed management activities. The Aquatic Weed Control General Permit sets forth detailed management practices to protect water quality from pesticide and herbicide use associated with aquatic weed control.

3.5 State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State

On April 2, 2019, the State Water Board adopted the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures; State Water Board 2019)*⁴. The Procedures provide the State's definition of wetland, wetland delineation procedures, and procedures for submitting applications for activities that could result in discharges of dredged or fill material to waters of the state. The Procedures ensure that State Water Board regulatory activities will result in no net loss of wetland quantity, quality, or permanence, compliant with Executive Order W-59-93. PG&E and Santa Clara will need to comply with the Procedures when conducting Project-related dredge or fill activities, which may impact waters of the state, including wetlands.

4.0 California Environmental Quality Act

Santa Clara is the lead agency for the Proposed Project for the purpose of compliance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.) and CEQA Guidelines (Cal. Code Regs., tit. 14, § 15000 et seq.). Santa Clara released a draft CEQA Supplement to the FERC Final EIS on June 3, 2020 with the comment period concluding on July 20, 2020. The CEQA Supplement determined that all impacts associated with the Proposed Project are less than significant and no mitigation measures were required. No substantive comments were received on the draft CEQA Supplement, and as such, there was no need for revision or responses to comments. The final CEQA Supplement was adopted by the City of Santa Clara's Council on September 29, 2020, and signed by the City Manager on October 5, 2020.

³ Water Quality Order No. 2013 0002 DWQ and NPDES No. CAG990005, as amended by Order No. 2014 0078 DWQ, Order No. 2015 0029 DWQ, Order No. 2016 0073 EXEC, and any amendments thereto. Available online at: https://www.waterboards.ca.gov/water_issues/programs/npdes/pesticides/weed_control.html. Last Accessed October 15, 2020.

⁴ The Office of Administrative Law approved the Procedures on August 28, 2019. The Procedures became effective on May 28, 2020. Available online at: https://www.waterboards.ca.gov/water_issues/programs/cwa401/wrapp.html. Last Accessed October 15, 2020.

5.0 Rationale for Water Quality Certification Conditions

The certification conditions were developed to protect and enhance beneficial uses of California's waters and achieve compliance with associated water quality objectives⁵. Section 401 of the federal Clean Water Act (33 U.S.C. § 1341) provides that the conditions contained in this certification be incorporated as mandatory conditions of the new license issued by FERC for the Project.

When preparing the conditions in this certification, State Water Board staff reviewed and considered the following information:

- (a) the final license application and supplemental filings to FERC, application for water quality certification, and any updates thereto;
- (b) comments submitted by agencies and interested parties on the draft license application and certification application;
- (c) Final Resource Management and Monitoring Plans developed by PG&E, Santa Clara, and Relicensing Participants⁶;
- (d) FERC's Final EIS prepared pursuant to National Environmental Policy Act (42 U.S.C. § 4332);
- (e) USFWS's Biological Opinion;
- (f) Forest Service Final Section 4(e) Conditions, Bucks Creek Hydroelectric Project, FERC No. 619 (Final 4(e)s), dated October 7, 2019;
- (g) the Recommendations of the California Department of Fish and Game Pursuant to Federal Power Act Section 10(j) for FERC Project No. 619 (CDFW 10(j) Recommendations);
- (h) Santa Clara's CEQA Supplement; and
- (i) other information in the record.

⁵ Designated beneficial uses and associated water quality objectives for surface waters in the Project area are described in Section 3.2 of this certification, and in Section 2 of the Basin Plan.

⁶ Relicensing Participants that were involved in the development of PG&E and Santa Clara's proposed measures include: United States Department of Agriculture, Forest Service (Forest Service), United States Department of the Interior, Fish and Wildlife Service (USFWS); California Department of Fish and Wildlife (CDFW); American Whitewater (AW), the Bucks Lake Homeowners Association (BLHOA), and State Water Board staff.

State Water Board staff also considered the following information: (a) existing and potential beneficial uses; (b) associated water quality objectives in the Basin Plan; and (c) Project-related controllable water quality factors

The following describes the rationale used to develop the conditions in this certification.

5.1 Rationale for Condition 1: Minimum Instream Flows

Condition 1 requires implementation of new minimum instream flows (MIFs) in: Bucks Creek below Bucks Lake and below Lower Bucks Lake; Grizzly Creek below Grizzly Forebay; and Milk Ranch Creek tributaries below Three Lakes. These Milk Ranch Creek tributaries include proposed PG&E Diversion No. 1 on Milk Ranch Creek and PG&E Diversion No. 3 on South Fork Grouse Hollow Creek. Due to the remoteness and inaccessibility of some flow gages, minimum instream flow compliance will be reported with manually collected data (see Tables 1, 4, 5, and 6). The approach for developing MIFs focused on providing continuous wetted stream channel conditions for benthic macroinvertebrate (BMI) in spring and summer months, enhancing the cold water trout fishery using the weighted usable area rather than flow relationships for all life stages, and supporting the protection and enhancement of aquatic and riparian resources.

5.2 Rationale for Condition 2: Cease Diversions at Milk Ranch Conduit Diversion No. 8

Bear Ravine is a tributary to Bucks Creek that contains USFWS-designated critical habitat for Sierra Nevada yellow-legged frog (*Rana sierrae*) (SNYLF). For most of the year, flow in Bear Ravine is significantly reduced by flow diverted into Milk Ranch Conduit. Condition 2 restores the full natural flow in Bear Ravine downstream of Milk Ranch Conduit Diversion No. 8 in order to enhance critical habitat for the federally endangered SNYLF. This condition is intended to improve microhabitat connectivity for SNYLFs downstream of the diversion during drier months and eliminate any effects of Project operations and maintenance on SNYLFs in the Bear Ravine watershed (e.g., entrainment and instream flow effects).

Additionally, this condition potentially increases available habitat by providing or increasing surface water in shallow habitats for a greater proportion of the drier months. The potential for adverse effects from increased storm runoff downstream of the diversion is not well understood. Results of the SNLF population monitoring in Bear Ravine over duration of the license (Condition 16) will inform adaptive management actions, if necessary.

5.3 Rationale for Condition 3: Annual Drawdown of Three Lakes

Condition 3 requires initiation of the annual drawdown of Three Lakes in mid-August to avoid impacts to spawning and rearing habitat of brook trout in the Lower and Middle Three Lake. Having the lakes drawn down before mid-September will reduce the potential of dewatering brook trout redds. Although BMI communities could be potentially impacted from an influx of pea clams, these effects will be temporary. A

fixed flow drawdown will help maintain BMI populations until the valves are fully opened as part of the Winter Setting operations⁷.

5.4 Rationale for Condition 4: Channel Maintenance Flows

Condition 4 requires channel maintenance stream flows to recruit and redistribute spawning gravels and remove fine sediment that may have accumulated in interstitial areas, thus improving their suitability for fish spawning. Such flows also recruit, transport, and redistribute large woody material (LWM) that can have a beneficial effect on channel structure, habitat complexity, and aquatic food supply in Bucks Creek and Grizzly Creek. In addition, channel maintenance flows benefit riparian habitat by providing periodic scour and vegetation recruitment events, which are essential to maintaining diverse native plants, vegetation age classes, and habitat structures.

5.5 Rationale for Condition 5: Project Reservoirs Water Surface Elevations

Condition 5 requires minimum water surface elevations at Project reservoirs for the protection and enhancement of existing aquatic habitat over the winter and recreation resources during the peak recreation season. This measure is a continuation of an existing FERC license requirement and will not result in changes to current Project operations. The minimum water surface elevations in Lower and Middle Three Lakes are as in the 10-year period of 1957 through 1967.

5.6 Rationale for Condition 6: Spill Management at Grizzly Forebay and Lower Bucks Lake

Large flow fluctuations below Grizzly Forebay Dam, particularly if out-of-season, have the potential to negatively affect the foothill yellow-legged frog population in the NFFR several miles downstream of the Grizzly Creek confluence. This condition will limit flow fluctuations by extending the descending limb of the hydrograph in Bucks Creek and Grizzly Creek to improve conditions for foothill yellow-legged frogs and allow recruitment of woody riparian vegetation.

Condition 6 requires a gradual decrease of flows during high flow events at Grizzly Forebay Dam and Lower Bucks Lake Dam using managed spills. Grizzly Forebay and Lower Bucks Lake Dam have uncontrolled spillways and small low-level outlets designed for minimum instream flow releases. Managed spills are the only method to significantly affect the rate of change of Project spills at Grizzly Forebay and Lower Bucks Lake by implementing load changes in each associated powerhouse (i.e., if powerhouse flows are increasing, instream flows will decrease at a similar magnitude).

5.7 Rationale for Condition 7: Water Year Types

Condition 7 defines the four water year types for the Project. This classification will simplify the determination of the water year, compliance with the condition, and establish consistency across applicable conditions, including minimum instream flows

⁷ Winter Setting operations refers to when the low-level outlet valve is fully-open and the natural inflow equals the outflow of the reservoir.

(Condition 1), channel maintenance flows (Condition 4), Project reservoirs water surface elevations (Condition 5), and Milk Ranch Conduit Closure (Condition 9). For any given year, the water year classification may be adjusted at three points in time subsequent to the initial February designation by way of updates in the March, April, and May releases of the California Department of Water Resources' (DWR) Bulletin 120. DWR's May release of Bulletin 120 will determine the final water year type designation until the following February Bulletin 120 forecast is released. This adjustment to the forecasted water year type tracks variable snowpack and spring runoff conditions to inform adjustments to the water year.

5.8 Rationale for Condition 8: Milk Ranch Conduit Diversions Management

Condition 8 provides protection and enhancement of aquatic and aesthetic resources at six of the Milk Ranch Conduit Diversions that are currently inactive and no longer needed for Project operations. Condition 8 also requires PG&E and Santa Clara to identify the proposed disposition of these inactive diversions.

The diversion structures will be left in place as they are already effectively breached (e.g., filled with sediment or no longer physically intact) and currently allow full year-round stream flow below each diversion. Each of the diversions are located at varying distances and elevations above the roadway and are generally very difficult to access with vehicles and large equipment. As a result, removal of any inoperable diversion could likely only be accomplished with hand equipment. Further, the removal of any remaining structure could potentially compromise the integrity and stability of the channel and result in the removal of established riparian vegetation in the vicinity of the diversions. By leaving the diversions in place, the current channel and riparian conditions will be maintained and construction impacts to these resources associated with removal of the structures can be avoided. Concealing diversions that are currently visible from Three Lakes Road (Plumas National Forest Road 24N24) will improve the aesthetic appearance of the area.

5.9 Rationale for Condition 9: Milk Ranch Conduit Closure

Condition 9 will enhance seasonal aquatic and year-round riparian resources by extending the duration and magnitude of wetted channel conditions downstream of the diversions and increasing the frequency and magnitude of instream flows that would flush fine sediment out of the channel. Currently, tributaries downstream of the Milk Ranch Conduit only receive instream flows when the diversions are overflowing. During Wet water years, this condition will return all spring and summer flows from two of the largest diverted tributaries, PG&E Diversion Nos. 1 and 2 (Milk Ranch Creek and North Fork Grouse Hollow Creek, respectively), to their stream of origin. In the absence of this condition, water would be spilled at Lower Bucks Lake and would not be used for hydroelectric power generation.

5.10 Rationale for Condition 10: Woody Material Management

Regulated flows and the capture of LWM by Project impoundments limits the distribution and availability of woody debris in downstream reaches. LWM provides cover and

holding habitat for fish, influences sediment storage and channel morphology, and serves as substrate for the growth of algae and invertebrates. Loss of LWM can reduce aquatic habitat complexity and subsequently reduce the carrying capacity for aquatic biota. Condition 10 requires the passive and mechanical introduction of woody material to Bucks Creek and Grizzly Creek to enhance habitat for fish and other aquatic organisms.

5.11 Rationale for Condition 11: Fish Stocking

Although a historically fishless area, CDFW has stocked Bucks Lake and Middle and Lower Three Lakes since the Project's construction. The current stocking program, along with an existing naturally reproducing population of trout in Grizzly Forebay, provides significant angling opportunities and bolsters fish populations. Stocking is necessary to maintain recreational fishing in Project waters. Condition 11 requires PG&E and Santa Clara contribute to a trout fishery for recreation.

5.12 Rationale for Condition 12: Bucks Lake Shoreline Management

Condition 12 requires implementation of the Bucks Lake Shoreline Management Plan, which establishes general policies for managing uses on both PG&E-owned and National Forest Service areas of shoreline at Project reservoirs in the Project boundary. The Bucks Lake Shoreline Management Plan maintains a balance among: recreation interests; environmental, biological, and cultural resource protection; commercial resort business needs; personal property rights; and the promotion of the general economic vitality at and near the Project.

5.13 Rationale for Condition 13: Streamflow and Reservoir Level Gaging

Compliance with certification conditions (Condition 1, Condition 4, Condition 5, and Condition 6) requires accurate and reliable gaging. Condition 13 requires PG&E and Santa Clara to provide details regarding the location, operation, required maintenance activities, and data collection and reporting protocol for each gage used to document certification compliance. The Streamflow and Reservoir Level Gaging Plan also includes a schedule for the modification or construction of new gages that are needed to adequately record minimum instream flows.

5.14 Rationale for Condition 14: Gravel Augmentation

Project impoundments on Bucks Creek and Grizzly Creek trap all coarse sediment from upstream sources, potentially limiting available gravel in downstream reaches where it is necessary to support spawning habitat for trout. Condition 14 requires the enhancement of trout spawning habitat by supplying the upper reaches of Grizzly Creek (below Grizzly Forebay Dam) and Bucks Creek (below Lower Bucks Dam) with spawning-sized gravel.

5.15 Rationale for Condition 15: Aquatic Resources Monitoring

Aquatic conditions in the Project area may change as a result of current or future Project operations and maintenance activities, which may affect stream fish populations,

brook trout populations in Three Lakes, BMI, stream channel morphology, LWM supply, foothill yellow-legged frogs, water temperature, water quality, and riparian vegetation. Condition 15 requires the documentation of any long-term changes in aquatic resource conditions as a result of the certification conditions, including increased minimum instream flows, LWM and gravel augmentation, controlled drawdowns, and managed spill recession rates. The Aquatic Resources Monitoring Plan will provide the methods, locations, and timing of surveys and monitoring activities to help determine any impacts that Project activities may have on aquatic resources.

5.16 Rationale for Condition 16: Sierra Nevada Yellow-Legged Frog Management

SNYLFs are currently under various levels of protection from state and federal listings, including: listed as endangered under the federal Endangered Species Act (ESA); listed as threatened under the California ESA, considered a sensitive species by the Forest Service; and listed on the Watch List by CDFW. Because designated critical habitat and occurrences of SNYLFs are known to occur in the Project area, Condition 16 requires periodic monitoring to assess the presence of SNYLFs and evaluate potential effects from Project operations. Condition 16 also requires the protection of SNYLF populations through implementation of spatial buffers, limited operating periods, chemical restrictions, and surveying protocols for Project operations, maintenance, and construction activities that occur at locations above 4,500 ft⁸.

5.17 Rationale for Condition 17: Aquatic Invasive Species Management

Aquatic invasive species (AIS), such as New Zealand mudsnails, quagga mussels, zebra mussels, and signal crayfish can clog facility pipes and out-compete other aquatic macroinvertebrates for food and habitat, disrupting ecosystem balances across the food web. Recreational angling and boating activities provide frequent opportunities for boats and trailers to inadvertently transfer AIS into Project reservoirs. Although signal crayfish are the only existing AIS in Project waters, public education programs at Project recreation areas and best management practices for Project operations and maintenance activities are necessary to minimize the risk of transporting AIS from other infected waterbodies. Condition 17 requires the implementation of the Aquatic Invasive Species Plan, which includes best management practices to prevent the introduction of AIS into Project waters, early AIS detection monitoring, and monitoring and management of existing AIS populations.

5.18 Rationale for Condition 18: Integrated Vegetation Management

Project operation and maintenance activities and recreational uses have the potential to negatively affect special-status plants and rare natural communities, including riparian habitats and wetlands, and to introduce and spread non-native invasive plants. In addition, Bucks Lake reservoir level fluctuations contribute to limited quaking aspen

⁸ The range of SNYLFs in the Project vicinity includes lakes, ponds, wet meadows, and streams above 4,500 ft in elevation. SNYLF individuals have not been detected and are not expected to occur downstream of the Project.

grove recruitment and temporary impacts to a portion of a fen wetland. Condition 18 requires the management of vegetation, including non-native invasive plants, special-status plant species, and special-status natural communities in the Project area.

5.19 Rationale for Condition 19: Hazardous Materials Management

Construction of new Project facilities, modification of existing Project facilities, and routine and non-routine maintenance could affect water quality if pollutants (e.g., fuels, lubricants, herbicides, pesticides, and other hazardous materials) are discharged into Project waterways. PG&E and Santa Clara may need to perform work that involves the use of hazardous materials. Condition 19 requires implementation of the Hazardous Materials Management Plan to help ensure that land and aquatic resources will be protected. Condition 19 requires the implementation of standard practices for storing, using, transporting, and disposing of hazardous materials in the Project area to minimize potential negative impacts to Project waters, public land, and human health and safety.

5.20 Rationale for Condition 20: Erosion Management

Condition 20 will help minimize erosion and sedimentation related to the Project as a result of ground-disturbing activities associated with Project operations and maintenance activities, emergency situations, and planned projects in the Project area. The Erosion Management Plan describes measures the Licensees will employ to minimize erosion and sedimentation. It also includes work-specific erosion management plans, permits, and agency consultation protocol that are required prior to initiating ground-disturbing activities.

5.21 Rationale for Condition 21: Recreation Management

Existing Project recreation facilities require updates, reconstruction, or improvements so that they will meet current or future visitor needs. Replacement may be needed for facilities that are at the end of their serviceable life, and improvements will generally be necessary so that facilities meet current accessibility guidelines. Over the first 20 years of the new FERC license, all existing Project recreation facilities will be reconstructed to provide sufficient amenities, services, and visitor comfort at or above the level previously provided by the Project. Condition 21 requires the identification of all existing recreation facilities and amenities, definition of a schedule for all planned actions related to recreation developments, description of the operations and maintenance responsibilities for Project recreation facilities, and consultation and monitoring.

5.22 Rationale for Condition 22: Annual Ecological Consultation Group Meeting

Monitoring and management plans required by this certification will assist the Relicensing Participants in evaluating impacts associated with the implementation of new FERC license conditions on hydrological, biological, and geomorphological resources in the Project area throughout the term of the license. Annual consultation meetings bring the Relicensing Participants and interested parties together to discuss monitoring results and resource trends, and develop adaptive management actions, if necessary, to protect water quality and beneficial uses. Condition 22 requires annual

consultation meetings with the Relicensing Participants and other interested parties to review monitoring reports and discuss ongoing and forecasted operations, including revisions or modifications to monitoring and/or operations that may be needed to protect water quality and beneficial uses.

5.23 Rationale for Condition 23: Dewatering and Diversion Plan

Instream and in-water construction activities have the potential to negatively impact water quality. Condition 23 requires the isolation of construction activities from Project waters so that turbidity and sedimentation are avoided whenever possible and minimized when discharges cannot be avoided. This condition requires the development and implementation of a plan to ensure compliance with Basin Plan water quality objectives for turbidity and bypass flows to support downstream beneficial uses and protect aquatic species. Activities that may require a dewatering a diversion plan must be identified as part of the annual ECG meeting (Condition 22).

5.24 Rationale for Condition 24: Extremely Dry Conditions

California's history of drought illustrates the importance of planning for multiple dry years or drought. It is difficult to anticipate the specific impacts of consecutive dry years or a long-term drought and identify where limited water supplies may be best used during times of shortage. Condition 24 allows PG&E and Santa Clara to submit and request Deputy Director approval of a Revised Operations Plan to address water shortage issues during consecutive Dry or Critically Dry water year types or drought years. This condition provides flexibility for adaptive implementation during times of extreme water shortage.

Rationale for Conditions 25 through 50

In order to ensure that the Project operates to meet water quality standards as anticipated, to ensure compliance with other relevant state and federal laws, and to ensure that the Project will continue to meet state water quality standards and other appropriate requirements of state law over its lifetime, this certification imposes conditions regarding monitoring, enforcement, and potential future revisions. Additionally, California Code of Regulations, title 23, section 3860 requires imposition of certain mandatory conditions for all water quality certifications, which are included in this certification.

6.0 Conclusion

The State Water Board finds that, with the conditions and limitations imposed under this certification, the proposed Project will be protective of state water quality standards and other appropriate requirements of state law.

7.0 Water Quality Certification Conditions

ACCORDINGLY, BASED ON ITS INDEPENDENT REVIEW OF THE RECORD, THE STATE WATER RESOURCES CONTROL BOARD CERTIFIES THAT OPERATION OF THE BUCKS CREEK HYDROELECTRIC PROJECT (Project) will comply with sections 301, 302, 303, 306, and 307 of the Clean Water Act, and with applicable provisions of State law under the following terms and conditions.

CONDITION 1. Minimum Instream Flows

The Licensees shall provide instream flow releases at the following locations:

- Bucks Creek below Bucks Lake Dam;
- Bucks Creek below Lower Bucks Lake Dam;
- Grizzly Creek below Grizzly Forebay;
- Milk Ranch Creek below Three Lakes;
- Milk Ranch Creek at Milk Ranch Conduit Diversion No. 1; and
- South Fork Grouse Hollow Creek at Milk Ranch Conduit Diversion No. 3.

The Licensees shall provide minimum instream flows as specified in Tables 1 through 6. For compliance purposes, the point of measurement for each required minimum instream flow is described in the Streamflow and Reservoir Level Gaging Plan (Condition 13) and Tables 1 through 6.

The Licensees shall implement specified minimum instream flows within the first 90 days of the new license term, as required in Tables 1 through 6.⁹ Where an instream flow release structure must be modified or newly constructed (refer to the Streamflow and Reservoir Level Gaging Plan – Condition 13), the Licensees shall complete the work as soon as reasonably practicable, and within two years after receiving all required permits and approvals for the work.

Flows shall be measured at the gage or Project location referenced in this condition unless otherwise approved by the Deputy Director. The Licensees shall comply with applicable California laws and regulations regarding measuring and monitoring water diversions, including California Code of Regulations, title 23, section 933, and amendments thereto, and State Water Board requirements to provide telemetered

⁹ Releases made through manually operated valves may be subject to weather and road conditions affecting access or operability, and they shall be made as soon as reasonably practicable given the circumstances.

diversion data on a public website.¹⁰ The Licensees shall post all gaged flow and other data to the California Data Exchange Center website, within 24-hours of flow measurement, unless otherwise approved by the Deputy Director. The Licensee shall publicly notice at an easily accessible location on the internet all known events that will affect minimum flow releases (e.g., powerhouse outages, construction, etc.) a minimum of 30 days in advance.

Flow Measurements and Reporting for Locations with Continuous Measurements (Table 2 and Table 3). At locations with continuous instream flow measurements (see Tables 2 and 3), minimum instream flows shall be measured as an average hourly flow calculated at the top of each hour. At a minimum, the Licensees shall calculate the average hourly flow by taking the mean of four instantaneous measurements at 15-minute intervals, as specified by United States Geological Survey (USGS) standards. The average hourly instream flow shall be at least 90 percent of the applicable minimum instream flow requirement set forth in Tables 2 and 3. If the average hourly flow temporarily falls below the applicable minimum instream flow requirement (due to unforeseen circumstances such as debris blocking the intake, ice conditions on the measurement weir, etc.) the Licensees shall restore the required minimum instream flow as soon as reasonably practicable and notify the Deputy Director of the Division of Water Rights (Deputy Director) within 24 hours of the temporary hourly flow deviation. For any temporary average hourly instream flow decreases, the Licensee shall document the following items in the annual report: (a) duration of decreased flow; (b) cause of decreased flow; and (c) actions the Licensees propose to take or have taken to prevent such a decrease in flows in the future or a description of why such actions are not feasible.

The average daily flow shall meet the applicable minimum instream flow requirement. If the average daily flow deviates below the applicable minimum instream flow requirement, the Licensees shall file a report with: Federal Energy Regulatory Commission (FERC); United States Department of Agriculture, Forest Service (Forest Service); United States Department of the Interior, Fish and Wildlife Service (USFWS); California Department of Fish and Wildlife (CDFW); and Deputy Director within 30 days of the incident. The report shall identify, to the extent possible, the cause, magnitude (i.e., instream flows measured versus instream flow requirement), duration of the deviation, any observed or reported adverse environmental impacts resulting from the deviation, all corrective actions taken, and actions the Licensees propose to take to prevent such a decrease in flows in the future.

The Deputy Director may require the Licensee to implement corrective actions to prevent similar future deviations in instream flows.

¹⁰ Information regarding telemetered requirements are available at the State Water Board's [Telemetry Requirements webpage](https://www.waterboards.ca.gov/waterrights/water_issues/programs/measurement_regulation/telemetry_requirements.html), which is available online at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/measurement_regulation/telemetry_requirements.html. (Last Accessed October 21, 2020)

Flow Measurements and Reporting for Locations with Manual Data Collection (Table 1, Table 4, Table 5, and Table 6). At locations with manual data collection, the release valve shall be inspected and maintained at least once in each of the spring, summer, and fall of each year. Seasonal inspection, maintenance, and documentation of valve settings will constitute compliance with flow requirements at these locations. Adjustments to the valves during seasonal inspections may be needed to comply with the prescribed minimum instream flows in Tables 1, 4, 5, and 6, and adjustments to the valves shall be documented in the annual report described below.

The minimum instream flow requirements listed in Tables 1, 4, 5, and 6 may be temporarily modified as required for maintenance or repair of a dam, outlet facility, and minimum flow release facility. The Licensees shall notify FERC, the Forest Service, CDFW, USFWS, and the Deputy Director at least five business days prior to any such modification. The notification shall include: a description of the temporary flow modification; reason for the temporary flow modification; any potential impacts that may result from the temporary flow modification; and anticipated duration of the temporary flow modification. The Deputy Director may require the Licensees to defer the temporary flow modification or implement other actions as part of the temporary flow modification.

The Licensees shall notify FERC, Forest Service, CDFW, USFWS, and the Deputy Director within two business days after any modification of the minimum instream flows due to operational emergencies beyond the control of the Licensees, or in the interest of public safety. For the purposes of this condition, an “emergency” is defined as an event that is reasonably out of the control of the Licensees and requires Licensees to take immediate action, either unilaterally or under instruction by law enforcement or other regulatory agency staff, to prevent imminent loss of human life or substantial property damage. An emergency may include but is not limited to: natural events such as landslides, storms or wildfires; malfunction or failure of Project works; and recreation accidents. Extremely dry conditions, including a drought for which the Governor of the State of California declares a drought emergency for Plumas County, shall not be considered an emergency for purposes of this condition.

Annual Reporting on Minimum Instream Flow Compliance. After consulting with and incorporating any comments from the Forest Service, CDFW, USFWS, and State Water Board staff, the Licensees shall submit the final annual report to the Deputy Director that summarizes compliance with the minimum instream flow requirements during the prior water year¹¹ as specified in Condition 25. The annual report shall be submitted to the Deputy Director no later than December 15 and shall include the items referenced below and in this condition.

Continuous Monitoring: For all continuously gaged locations, daily mean data shall be included in the report.

¹¹ A water year refers to the 12-month time period from October 1 to September 30.

Manual Monitoring: At locations with flow releases based on manual valve settings, the Licensees shall provide an annual report that includes:

- The dates the Licensees checked the outlet works/valves at each site from the beginning of spring through fall;
- The estimated flow released at the time the valve was checked, along with a comparison to the applicable minimum instream flow requirement;
- Documentation of any adjustments made at each site at the time the outlet works/valves were checked and the estimated flow released following any adjustments; and
- The date the valves were adjusted to the Winter Setting (WS) at Milk Ranch Creek below Three Lakes (Table 4) and at Milk Ranch Conduit Division No. 1 (Table 5), respectively. If the valve(s) was set to the WS prior to November 1, the Licensees shall describe the conditions that required the early adjustment.

Deviations from Minimum Instream Flows: Any deviations from the minimum instream flows outlined in this condition shall be summarized in the report, including all information referenced earlier in this condition.

The Licensees shall review the instream flow annual report at the annual Ecological Consulting Group (ECG) meeting (Condition 22).

Table 1. Bucks Creek Minimum Instream Flow Requirements Below Bucks Lake by Water Year Type (in cubic feet per second [cfs]), as measured at Project ID BUCKS2

Water Year Type	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
All	3	3	3	3	3	3	3	3	3	3	3	3

Table 2. Bucks Creek Minimum Instream Flow Requirements Below Lower Bucks Lake by Water Year Type (in cfs), as measured at USGS Gage No. 11403530 (also referred to as Project ID NF82)

Water Year Type	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Critically Dry	6	4	4	4	6	7	7	7	6	6	6	6
Dry	6	5	5	5	6	8	8	8	8	6	6	6
Normal	6	6	6	6	8	12	12	12	9	8	8	7
Wet	8	8	8	8	10	15	15	15	11	10	8	8

Table 3. Grizzly Creek Minimum Instream Flow Requirements Below Grizzly Forebay by Water Year Type (in cfs), as measured at USGS Gage No. 11404300 (also referred to as Project ID NF22)

Water Year Type	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Critically Dry	6	4	4	4	4	6	6	6	6	6	6	6
Dry	6	6	6	6	6	8	8	8	8	8	8	6
Normal	8	8	8	8	8	10	10	10	9	9	9	8
Wet	9	9	9	9	10	13	13	13	11	10	10	9

Table 4. Milk Ranch Creek Minimum Instream Flow Requirements Below Three Lakes by Water Year Type (in cfs), as measured at Project ID MR2

Water Year Type	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Critically Dry	0.25	WS ¹	WS	WS	WS	WS	0.25 ²	0.25	0.25	0.25	0.25	0.25
Dry	0.5	WS	WS	WS	WS	WS	0.5 ²	0.5	0.5	0.5	0.5	0.5
Normal	1	WS	WS	WS	WS	WS	1 ²	1	1	1	1	1
Wet	2	WS	WS	WS	WS	WS	2 ²	2	2	2	2	2

- ¹ WS: “Winter Setting” refers to when the low-level outlet valve is fully-opened and the natural inflow equals the outflow of the reservoir. The Licensees may open the outlet to the WS prior to November 1 if weather is predicted that may restrict safe access to the valve house.
- ² The Licensees shall adjust the valve within two business days, or as soon thereafter as accessible, following the publication of California Department of Water Resources water year forecast of unimpaired runoff in the Feather River at Oroville as set forth in Bulletin 120.

Table 5. Milk Ranch Creek Minimum Instream Flow Requirements at Milk Ranch Conduit Diversion No. 1 by Water Year Type (in cfs), as measured at Project ID MRC1

Water Year Type	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Critically Dry	0.25	0.25 ¹	0.25 ¹	0.25 ¹	0.25 ¹	0.25 ¹	0.25 ²	0.25	0.25	0.25	0.25	0.25
Dry	0.5	0.25 ¹	0.25 ¹	0.25 ¹	0.25 ¹	0.25 ¹	0.5 ²	0.5	0.5	0.5	0.5	0.5
Normal	1	0.25 ¹	0.25 ¹	0.25 ¹	0.25 ¹	0.25 ¹	1 ²	1	1	1	1	1
Wet	2	0.25 ¹	0.25 ¹	0.25 ¹	0.25 ¹	0.25 ¹	2 ^{2,3}	2 ³	2 ³	2 ³	2 ³	2

- ¹ 0.25 or natural inflow, whichever is less. The Licensees may set the outlet to 0.25 cfs prior to November 1 if weather is predicted that may restrict safe access to the diversion.
- ² The Licensees shall adjust the valve within two business days, or as soon thereafter as accessible, following the publication of the California Department of Water Resources water year forecast of unimpaired runoff in the Feather River at Oroville as set forth in Bulletin 120.
- ³ If conditions are met in accordance with Condition 9 – Milk Ranch Conduit Closure, bypass flows shall be implemented from April through August 15 in

Table 6. South Fork Grouse Hollow Creek Minimum Instream Flow Requirements at Milk Ranch Conduit Diversion No. 3 by Water Year Type (in cfs), as measured at Project ID MRC2

WY Type	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
All	0.5 ¹	0.5 ¹	0.5 ¹	0.5 ¹	0.5 ¹	0.5 ¹	0.5 ¹	0.5 ¹	0.5 ¹	0.5 ¹	0.5 ¹	0.5 ¹

¹ 0.5 or natural inflow, whichever is less.

CONDITION 2. Cease Diversions at Milk Ranch Conduit Diversion No. 8

For the protection of the federally Endangered Species Act (ESA)-listed endangered Sierra Nevada yellow-legged frog (*Rana sierrae*), the Licensees shall permanently cease diversion of flows from Bear Ravine into Milk Ranch Conduit at Milk Ranch Conduit Diversion No. 8, thus allowing the full natural flow in Bear Ravine. Within 60 days, or as soon as is reasonably accessible following license issuance (whichever is later), the Licensees shall install a cap or cover that will completely close and secure the diversion pipe into the Milk Ranch Conduit. Existing infrastructure may be left in place to minimize adverse environmental effects. The Licensees shall also install screens and maintain air vents in order to prevent wildlife from entering the vents. In addition, the Licensees shall perform any necessary maintenance on the screens to prevent wildlife intrusion.

Prior to any modifications of this diversion structure beyond those discussed in this condition (i.e., cap and secure the diversion pipe, screen installation, air vents), the Licensees shall consult with the Forest Service, USFWS, CDFW, and State Water Board staff. The consultation shall include the option to visit the site to discuss the proposed work. Following consultation, the Licensees shall submit the proposed modifications to the Deputy Director for review and consideration of approval. The Deputy Director may require modifications as part of any approval. At a minimum, the proposed modifications shall include: measures that will be implemented to protect water quality and beneficial uses; schedule; and documentation of consultation, including any comments received. The Licensees shall complete the proposed work following receipt of approval from the Deputy Director and any other required approvals.

The Licensees shall monitor the existing diversion structure and adjacent hillslope following Wet water years (as defined in Condition 7) for signs that the structure or hillslope are at risk of failure. If the Licensees determine that non-routine maintenance of the structure or hillslope is required to prevent significant adverse environmental impacts, the Licensees shall consult with Forest Service, USFWS, CDFW, and State Water Board staff regarding appropriate protection measures, as outlined in the Sierra Nevada Yellow-legged Frog Management Plan (Condition 16). Following consultation, the Licensees shall submit any non-routine maintenance to the Deputy Director for review and consideration of approval. At a minimum, the proposed modifications shall include: measures that will be implemented to protect water quality and beneficial uses; schedule; and documentation of consultation, including any comments received. The Deputy Director may require modifications as part of any approval. The Licensees shall complete the proposed modifications following receipt of approval from the Deputy Director and any other required approvals.

CONDITION 3. Annual Drawdown of Three Lakes

The Licensees shall verify the water surface elevation of Lower Three Lakes on August 15 of each year, or the shortest amount of time before August 15 if conditions prevent access.

- If the water surface elevation is above 6,072 feet (ft), as measured by Gage NF10 (USGS Gage No. 11403300), the Licensees shall initiate drawdown on August 15, or the shortest amount of time before August 15 if conditions prevent access, and set the low-level outlet valve to release 9 cfs (based on the rating curve at Project ID MR2).
- If the water surface elevation is at or below 6,072 ft, as measured by Gage NF10, the Licensees shall calculate the date on which they will initiate drawdown at a release of 9 cfs with the objective of reaching minimum pool at Lower Three Lakes (water surface elevation of 6,050 ft) by September 15.

After setting the low-level outlet valve at Three Lakes to release 9 cfs as described above, the Licensees shall not modify the valve until November 1. On November 1 of each year the Licensees shall fully open the low-level outlet valve to the “Winter Setting” (see Table 4). The low-level outlet valve shall be set to release 9 cfs, based on the rating curve, however actual flow releases from the low-level outlet valve may vary depending on reservoir head and natural inflow into Three Lakes. The low-level outlet valve may be fully opened to the Winter Setting prior to November 1 if predicted weather may restrict safe access to the valve house. In such instances, the Licensees shall provide the Deputy Director with notice of the need to fully open the low-level outlet valve earlier than November 1 and provide associated supporting documentation.

By January 31 of each year, the Licensees shall provide the Forest Service, CDFW, USFWS, and State Water Board staff a draft report documenting the following:

- The water surface elevation of Lower Three Lakes on or preceding August 15 (if access is precluded), when the water surface elevation was verified. If the water surface elevation is verified on a date other than August 15, that date shall be identified;
- The date the Licensees initiated drawdown of Three Lakes;
- The date when minimum pool was reached at Lower Three Lakes; and
- The date when the outlet valve was fully opened to the “Winter Setting.”

After consulting with and incorporating any comments from the Forest Service, CDFW, USFWS, and State Water Board staff, the Licensees shall file a final report with the Deputy Director on the drawdown of Three Lakes, as specified in Condition 25 and before the ECG meeting each year. The Licensees shall review the dates associated with the prior year’s drawdown at the annual ECG meeting (Condition 22).

CONDITION 4. Channel Maintenance Flows

The Licensees shall provide channel maintenance flows (referred to as spills) in Wet and Normal water years at the following locations:

- Bucks Creek below Lower Bucks Lake; and
- Grizzly Creek below Grizzly Forebay.

Water year designations shall be based on the March issuance of the California Department of Water Resources (DWR) March Bulletin 120 forecast (as defined in Condition 7 – Water Year Types).

Bucks Creek below Lower Bucks Lake

Annual Spill Requirements. If, by March 31 of each Normal or Wet water year in which a natural spill in excess of 70 cfs (as measured by Gage NF57 on the NFFR, which is part of the Rock Creek-Cresta Project, FERC Project No. 1962) has not occurred in the previous 18 months, the Licensees shall provide instream flows of 50– 70 cfs in Bucks Creek below Lower Bucks Lake Dam for a period of at least 18 hours. This may be accomplished by any combination of spill, release, and accretion flows. At the end of this event, the Licensees shall smoothly taper off the flow consistent with existing equipment and the requirements in Condition 6 – Spill Management at Grizzly Forebay and Lower Bucks Lake. The Licensees shall make reasonable efforts to coordinate this event with high flows (above 3,000 cfs) in the North Fork Feather River (NFFR). If the March Bulletin 120 forecast indicates that the water year type is Dry or Critically Dry this Annual Spill flow is not required for that year regardless of whether later forecasts indicate that the water year type is Normal or Wet.

High Spill Requirement. If, by March 31 of each Normal or Wet water year in which a High Spill¹² has not occurred during the previous five years in Bucks Creek below Lower Bucks Lake Dam, the Licensees shall implement a High Spill event of 200–300 cfs for at least 18 hours. This event shall be concurrent with flows of more than 3,000 cfs at Gage NF57. The Licensees are not required to implement a High Spill if flows at Gage NF57 in excess of 3,000 cfs are not available or the Licensees cannot reasonably accommodate a High Spill at a time when 3,000 cfs may be available due to safety or emergency conditions that exist at the time. In such an event, the Licensees may consider a High Spill concurrent with a flow at Gage NF57 of less than 3,000 cfs but in no event less than 1,600 cfs, recognizing that this further consideration may result in a postponement of the High Spill to a future year. The Licensees shall electronically notify the Forest Service, CDFW, USFWS, and State Water Board staff of the planned High Spill event, including the proposed schedule for the spill.

Upon completion of the 18-hour High Spill, the Licensees shall smoothly taper off the flow consistent with existing equipment and the requirements in Condition 6 – Spill Management at Grizzly Forebay and Lower Bucks Lake. If the March Bulletin 120 forecast indicates that the water year type is Dry or Critically Dry, this High Spill event is not required for that year and shall be postponed to the next eligible year regardless of whether later Bulletin 120 forecasts indicate that the water year type is Normal or Wet.

Unplanned Spill Events. Although rare, it is possible that Lower Bucks Lake may experience an unavoidable spill in the spring months due to an uncontrolled spill at Bucks Lake, powerhouse outages, or other emergencies. In such event, and to the

¹² A High Spill, in this case, refers to a flow of 200–300 cfs for at least 18 hours in duration.

extent reasonably possible under these conditions, the Licensees shall notify the Forest Service, CDFW, USFWS, and State Water Board staff and minimize the magnitude of such spill if corresponding high flow conditions (above 3,000 cfs) are not present in the NFFR. In the event an unplanned spill may be expected to occur prior to March 31, and if such spill could be increased to over 200 cfs for at least 18 hours, the Licensees shall notify (by email and phone) the Forest Service, CDFW, USFWS, and State Water Board staff prior to implementation of any actions to increase the spill, if time permits. Reasonable efforts shall be made to incorporate any comments received from the agencies recognizing that rapidly changing conditions may necessitate action by the Licensees to take advantage of the opportunity to spill more than 200 cfs.

Measurement. Measurement of channel maintenance flows in Bucks Creek shall be based on reservoir elevation and appropriate rating tables for the spillways for each dam. Unless otherwise approved by the Deputy Director, the Licensees shall use telemetered reservoir elevations to monitor and control channel maintenance flows.

Grizzly Creek Channel Maintenance Flow Requirements

Annual Spill Requirements. The Licensees shall track natural spill events at Grizzly Forebay Dam. If, by March 31 of each Normal or Wet water year in which a natural spill in excess of 50 cfs for at least 18 hours duration has not occurred in the previous 18 months, the Licensees shall provide minimum instream flows of 50–70 cfs in Grizzly Creek below Grizzly Forebay Dam for a period of at least 18 hours prior to April 15 of that year. This may be accomplished by any combination of spill, release, and accretion flows. At the end of this event, the Licensees shall smoothly taper off the flow consistent with existing equipment and the requirements in Condition 6 – Spill Management at Grizzly Forebay and Lower Bucks Lake. If the March Bulletin 120 forecast indicates that the water year type is Dry or Critically Dry, this annual spill flow is not required for that year regardless of whether later forecasts indicate that the water year type is Normal or Wet.

Unplanned Spill Events. Spill flow at Grizzly Forebay is a common event in Normal and Wet water years; therefore, the Licensees are not required to provide any notification in the event of unplanned spills at this location.

Measurement. Flows in Grizzly Creek shall be measured at Project Gage NF22 (USGS Gage No. 11404300).

Reporting of Channel Maintenance Flows

The Licensees shall prepare a report for each year that a channel maintenance flow may be required to be released in either Bucks Creek or Grizzly Creek (i.e., Normal or Wet water years, as designated in the March Bulletin 120). The report shall include: data on the timing, magnitude, and duration of the spill flow(s); data on the timing, magnitude, and duration of the tapering flows; any turbidity data collected; why flows were not provided (e.g., flows in NFFR less than 3,000 cfs, spill occurred within past 18 months, etc.), if applicable; and any other observations. After consulting with and incorporating any comments from the Forest Service, CDFW, USFWS, and State Water Board staff, the Licensees shall file a final report on the channel maintenance flows with

the Deputy Director, as specified in Condition 25. The Licensees shall review the results of the channel maintenance flow report at the annual ECG meeting (Condition 22).

Emergency Conditions

If emergency conditions exist and the Licensees are unable to implement actions required by this condition, the Licensees shall notify the Deputy Director with a description of the emergency and associated implementation challenges, and may not be bound by the requirements of this condition.

CONDITION 5. Project Reservoirs Water Surface Elevations

The Licensees shall operate the Project to meet or exceed the following water surface elevations (elevations) for Lower Bucks Lake, Lower and Middle Three Lakes, Bucks Lake, and Grizzly Forebay.

Lower Bucks Lake

Elevation shall not be drawn down below an elevation of 4,966 ft above mean sea level (msl) and shall be measured at PG&E Gage NF13 (USGS Gage No. 11403520).

Lower and Middle Three Lakes

Elevation of Lower Three Lakes shall not be drawn down below 6,050 feet above msl; and Middle Three Lakes shall not be drawn down below an elevation of 6,057 feet msl. Elevations shall be measured at PG&E Gage NF10 (USGS Gage No. 11403300).

Bucks Lake

Elevation shall be determined based on month and water year type (Condition 7). Drawdown for a Wet or Normal water year between June 1 through September 1 shall not exceed 15 feet below the elevation of June 1, and shall not go below an elevation of 5,100 feet above msl. Drawdown for a Dry or Critically Dry water year shall not go below elevation 5,080 feet above msl prior to September 1. Elevations shall be measured at PG&E Gage NF16 (USGS Gage No. 11403500).

Grizzly Forebay

Elevation shall not be drawn down below 4,303 feet above msl. Elevations shall be measured at PG&E Gage NF19 (USGS Gage No. 11404250).

Departure from these elevations shall be permissible only when it is necessary to perform maintenance on the respective dams or their outlet works, when in the interest of public safety, or as may be otherwise authorized by the Deputy Director. The Licensees shall make every effort to schedule maintenance activities in a manner that allows for attainment of the elevations required in this condition. The Licensees shall report any deviations from the elevations to the Deputy Director within five days of the deviation, including the reason for the deviation and any proposed actions the

Licensees will take in the future to avoid a similar deviation, if applicable. All elevations are on Feather River Power Company datum¹³.

CONDITION 6. Spill Management at Grizzly Forebay and Lower Bucks Lake

To minimize the impact of unavoidable spills on Grizzly Creek, the Licensees shall draw down reservoir levels in Grizzly Forebay in advance of forecasted spill events to the extent practical. However, since Grizzly Forebay often receives more flow than is able to be released through Bucks Creek Powerhouse, the Licensees shall use managed spills to attenuate flows in Grizzly Creek.

At no time shall the Licensees schedule managed spills during the first five business days or the last two business days of the prescribed daily steps of the Rock Creek-Cresta Project's Cresta Reach 21-day Spill Recession (CSR)¹⁴. Preferably, the Licensees shall schedule Grizzly Forebay managed spills prior to the CSR; however, if that is impractical the managed spills may be scheduled during the 15 days of constant flow in the CSR (i.e., Days 6 through 20). For additional protection of the sensitive period of the foothill yellow-legged frog population in the Cresta Reach, powerhouse outages longer than two weeks in duration of Bucks Creek Powerhouse and Grizzly Powerhouse shall not be scheduled during the period of April through July. Although outages in fall months are unlikely to result in spills, no outages shall be scheduled in August or September if they will cause a spill.

Allowable Load Changes in Critically Dry, Dry, and Normal Water Years

April through September. For down-ramping of managed spills that occur from April through September, daily (24 hours) load changes shall not exceed the megawatt (MW) value in Tables 7, 8, and 9, corresponding to the applicable powerhouse and instantaneous spill flow at the beginning of that 24-hour increment.

October through March. For down-ramping of managed spills that occur from October through March, hourly (60 minutes) load changes shall not exceed the MW value in Tables 7, 8, or 9, corresponding to the applicable powerhouse and instantaneous spill flow at the beginning of that 60-minute increment. During spills greater than 350 cfs that occur from October through March, flexible schedules and bidding are allowed at

¹³ Elevations in "Feather River Power Company datum" are 3.5 ft lower than those expressed as "USGS Datum."

¹⁴ For the protection of foothill yellow-legged frogs, during the months of May through September in all year types, the Rock Creek-Cresta Project FERC license specifies that PG&E must implement the CSR. In this instance, CSR refers to a 21-day recession in the Cresta reach during the transition period from 1,000 cfs to base flows in the NFFR. For reference, the following steps are targets under the Rock Creek-Cresta Project FERC license based on daily average flow in cfs, measured at the Cresta Reservoir radial gate: Day 1 at 1,000 cfs, Day 2 at 920 cfs, Day 3 at 840 cfs, Day 4 at 760 cfs, Day 5 at 680 cfs, Days 6-20 at 600 cfs, Day 21 at 520 cfs, Day 22 at Base Flow.

sub-hourly increments, but load changes shall not exceed the MW value in Tables 7, 8, or 9 corresponding to the applicable powerhouse and instantaneous spill flow at the beginning of that increment.

Allowable Load Changes in Wet Water Years

May through September. For down-ramping of managed spills that occur from May through September, daily (24 hours) load changes shall not exceed the MW value in Tables 7, 8, or 9, corresponding to the applicable powerhouse and instantaneous spill flow at the beginning of that 24-hour increment.

October through April. For down-ramping of managed spills that occur from October through April, and when flows on the NFFR at PG&E Gage NF56 exceed 3,500 cfs, hourly (60 minutes) load changes shall not exceed the MW value in Tables 7, 8, or 9, corresponding to the applicable powerhouse and instantaneous spill flow at the beginning of that 60-minute increment.

During spills of greater than 350 cfs that occur from October through April, and when flows on the NFFR at PG&E Gage NF56 exceed 3,500 cfs, flexible schedules and bidding are allowed at sub-hourly increments, but load changes shall not exceed the MW value in Tables 7, 8, or 9, corresponding to the applicable powerhouse and instantaneous spill flow at the beginning of that increment.

Monitoring and Reporting

The Licensees shall monitor stream stage and calculated instream flow in Bucks Creek downstream of Lower Bucks Lake Dam and in Grizzly Creek downstream of Grizzly Forebay Dam for the first five years of the license, or until all three down-ramping scenarios have been implemented, whichever comes first. Flow measurement methods are described in the Streamflow and Reservoir Level Gaging Plan (Condition 13).

No later than five years after issuance of the new FERC license, the Licensees shall submit a draft report to Forest Service, CDFW, USFWS, and State Water Board staff that documents the effects of the measures listed in this condition on instream flow conditions in Bucks Creek, Grizzly Creek, and the NFFR and provide recommendations the Licensees will implement to improve compliance with this condition. After consulting with and incorporating comments from the Forest Service, CDFW, USFWS, and State Water Board staff, the Licensees shall file a final report on the spill management at Grizzly Forebay and Lower Bucks Lake with the Deputy Director, as specified in Condition 25. If, based on the report, resource agencies input, and associated hydrologic data, the Licensees propose to revise the condition to protect aquatic species differently than pursuant to the current requirements of this condition, the Licensees shall submit a formal request to amend the existing water quality certification. The Licensees shall include all relevant documentation of coordination and consultation with the request.

Table 7. Grizzly Powerhouse Load Changes for Spills at Grizzly Forebay Dam

Initial Flow at Gage NF22 (cfs)	Allowable Change (MW)	Approximate Powerhouse Flow Change Per Step (cfs)
> 800	--	--
551 – 800	12.0	203 – 209
351 – 550	8.0	135 – 140
150 – 350	4.0	67 – 70
< 150	2.0 ¹	33 – 35

¹ Depending on the 9 – 11 MW no-run zone, may require a 3-MW step.

Table 8. Bucks Creek Powerhouse Load Changes for Spills at Grizzly Forebay Dam

Initial Flow at Gage NF22 (cfs)	Allowable Change (MW)	Approximate Powerhouse Flow Change Per Step (cfs)
> 800	--	--
551 – 800	40.0	~207
351 – 550	24.0	119 – 158
150 – 350	12.0	58 – 86
< 150	6.0	29 – 45

Table 9. Grizzly Powerhouse Load Changes for Spills at Lower Bucks Dam

Initial Flow at Gage NF22 (cfs)	Allowable Change (MW)	Approximate Powerhouse Flow Change Per Step (cfs)
> 800	--	--
551 – 800	12.0	203 – 209
351 – 550	8.0	135 – 140
150 – 350	4.0	67 – 70
< 150	2.0 ¹	33 – 35

¹ Depending on the 9 – 11 MW no-run zone, may require a 3-MW step.

CONDITION 7. Water Year Types

The Licensees shall use the California DWR water year forecast of unimpaired runoff in the Feather River at Oroville as set forth in DWR's Bulletin 120¹⁵, each year in each month from February through May to determine the applicable water year type as described below when implementing the conditions of this water quality certification, including instream flows (Condition 1), channel maintenance flows (Condition 4), and Project reservoirs water surface elevations (Condition 5). The April forecast shall be used to determine if conditions are met for Wet water year Milk Ranch Conduit Diversion Nos. 1 and 2 bypass flows (Condition 9). Water years are categorized into four water year types based on inflow to Lake Oroville: Wet, Normal, Dry, and Critically Dry. The water year types are defined as follows:

- Wet: Greater than or equal to 5,679 thousand acre-feet (TAF) at Oroville;
- Normal: Less than 5,679 TAF but greater than or equal to 3,228 TAF at Oroville;
- Dry: Less than 3,228 TAF but greater than or equal to 2,505 TAF at Oroville; and
- Critical Dry: Less than 2,505 TAF at Oroville.

The Licensees shall use DWR's forecast of the water year type on or about February 10 to comply with the conditions of this water quality certification until the next month's water year type forecast (i.e., March, April, and May) is published in Bulletin 120. New forecasts will be made on or about the tenth of March, April, and May after the snow surveys are complete and compliance with certification conditions shall be changed accordingly within two business days, or as soon thereafter as accessible for locations that require manual modifications to implement. The May forecast shall establish the water year type until the February forecast for the following year is released.

CONDITION 8. Milk Ranch Conduit Diversions Management

Any existing inactive diversion structures shall be left in place and managed for safety and aesthetics by the Licensees. Six diversions along Milk Ranch Conduit (current FERC Diversion Nos. 1, 4, 5, 6, 7, and 8 identified in Figure 2 and Table 10) and their ancillary features are to be left inoperable (i.e., no longer divert flows). The Licensees shall seal any exposed intake and diversion pipe openings of the inoperable diversions. Other specific actions include:

- FERC Diversion No. 5 – The Licensees shall monitor the existing diversion structure following Wet water years for undermining and collapse. If the diversion structure collapses, the Licensees shall consult with Forest Service and State Water Board staff to identify appropriate actions.

¹⁵ Bulletin 120 is a publication issued four times a year, in the second week of February, March, April, and May by DWR. It contains forecasts of the volume of seasonal runoff from California's major watersheds, and summaries of precipitation, snowpack, reservoir storage, and runoff in various regions of California.

- FERC Diversion Nos. 1 and 7 – No later than six months following FERC license issuance, the Licensees, in consultation with the Forest Service, CDFW, USFWS, and State Water Board staff, shall develop an approach to modify or conceal the face of the diversion dams to create a more natural appearance. The Licensees shall consider methods such as chipping the concrete, modifying the flow pattern over the crest of the dam, and/or planting vegetation.
- FERC Diversion No. 8 – The Licensees shall remove the exposed diversion pipe and seal the opening following consultation with the Forest Service and State Water Board staff, and approval by the Deputy Director.

Following consultation and prior to implementation of the work outlined above for FERC Diversions 1, 5, 7, and 8, the Licensees shall submit the proposed work plan or actions to the Deputy Director for review and consideration of approval. The Deputy Director may require modifications as part of any approval. The Licensees shall implement the actions upon receipt of Deputy Director and any other required approvals. At all active and inactive diversion locations, the Licensees shall remove construction litter and diversion debris. The Licensees shall screen and maintain air vents in order to prevent wildlife from entering the vents.

Additionally, within 18 months following issuance of the FERC license, the Licensees shall provide the Deputy Director with the details of the existing water rights associated with each of the subject diversions (i.e., the diversion identified as inactive in Table 10), and a discussion of the Licensees' proposal for the disposition of these water rights. Requests for revocation or transfer of existing water rights to instream use, as applicable, shall be submitted to the Division of Water Rights within three years following issuance of the FERC license.

Table 10. Milk Ranch Conduit Diversions Status and Locations, as of 2017

FERC Diversion No. (licensed)	PG&E Diversion No. (proposed)	Stream Drainage	Diversion Status	Easting¹	Northing¹
1	--	--	Inactive	651398	4418798
2	9	--	Active	651313	4419738
3	8	Bear Ravine	Active ²	651633	4419902
4	--	--	Inactive	651377	4420560
5	--	--	Inactive	651364	4420593
6	--	--	Inactive	651098	4420817
7	--	-	Inactive	651049	4420823
8	--	--	Inactive	650856	4420850
9	7	Slide Ravine	Active	650294	4421100
10	6	Bear Trap Creek	Active	649900	4421474
11	5	N/A	Active	649591	4423096
12 and 13	4	N/A	Active	649931	4423444
14	3	South Fork Grouse Hollow Creek	Active	650493	4424947
15	2	North Fork Grouse Hollow Creek	Active	650582	4425208
Milk Ranch Creek	1	Milk Ranch Creek	Active	651220	4425622

¹ NAD83 UTM Zone 10N

² Although actively maintained as part of the previous FERC Project license (issued in 1974), the Licensees shall cease diversion of instream flows from Bear Ravine into Milk Ranch Conduit at Milk Ranch Conduit Diversion No. 8, per the requirements of Condition 2 – Cease Diversions at Milk Ranch Conduit Diversion No. 8.

CONDITION 9. Milk Ranch Conduit Closure

If the Bucks Lake elevation is 5,142 ft above msl or greater (as measured by PG&E Gage NF16) at the time of a Wet water year determination per the April Bulletin 120 forecast (Condition 7), the Licensees shall temporarily close (i.e., bypass) the following Milk Ranch Conduit Diversions within two business days, or as soon as reasonably accessible, from the publication date of the April Bulletin 120 forecast through August 15:

- PG&E Diversion No. 1 (Milk Ranch Creek)
- PG&E Diversion No. 2 (North Fork Grouse Hollow Creek)

By January 31, if flows were bypassed in the prior year, the Licensees shall provide the Forest Service, CDFW, USFWS, and State Water Board staff a report documenting the dates when the Licensees closed and reopened the Milk Ranch Conduit diversion valves. After consulting with and incorporating any comments from the Forest Service, CDFW, USFWS, and State Water Board staff, the Licensees shall file a final report on the Milk Ranch Conduit closure with the Deputy Director, as specified in Condition 25. The Licensees shall review the results of the Milk Ranch Conduit closure report at the annual ECG meeting (Condition 22).

CONDITION 10. Woody Material Management

The Licensees shall allow woody material to pass over Grizzly Forebay Dam during spill events and channel maintenance flows (Condition 4 – Channel Maintenance Flows) by leaving the downstream end of the reservoir’s log boom attached only to the right side of the spillway year-round, thereby allowing debris to freely pass over the spillway during spill events. If spill events and channel maintenance flows are insufficient to pass woody material (e.g., during multiple dry year conditions), the Licensees may periodically mechanically remove woody material from the reservoir if the woody material is deemed a possible operational hazard.

At Lower Bucks Lake Dam, the Licensees shall allow woody material to pass over the dam’s spillway during spill events. If spill events and channel maintenance flows are insufficient to pass woody material, the Licensees may periodically mechanically remove woody material from the reservoir if the woody material is deemed a possible operational hazard.

To avoid impacts to downstream culverts in Bucks Creek below Bucks Lake, woody material collecting near Bucks Lake spillway shall be relocated to Lower Bucks Lake spillway. If site conditions preclude placement and passage of wood on Lower Bucks Lake spillway, the Licensees may transport wood offsite following consultation with the resource agencies as described below.

All sizes of woody material, including woody material with root wads attached, shall be allowed to pass downstream past the dams. The Licensees shall avoid cutting the

wood, unless it is unsafe for Project operations or cannot mechanically be moved due to its large size.

For any woody material that cannot be passed downstream of Project dams, the Licensees shall consult with the Forest Service, USFWS, CDFW, and State Water Board staff to determine appropriate methods for removal, transport, and/or disposal.

CONDITION 11. Fish Stocking

No later than one year following issuance of the FERC license, the Licensees shall submit a fish stocking plan to the Deputy Director for review and consideration of approval. The Deputy Director may require modifications as part of any approval. The fish stocking plan shall be developed in consultation with the Forest Service, USFWS, CDFW, and State Water Board staff. The fish stocking plan shall outline how fish stocking will be managed in waters in the Project boundary while addressing applicable federal and state laws, regulations, and policies. At a minimum, the fish stocking plan shall include the following major sections:

1. Introduction;
2. Regulatory Framework and Stocking History;
3. Fish Stocking Methods, Species, and Targets; and
4. Reporting, Consultation, and Plan Revisions.

The Licensees shall implement the fish stocking plan beginning the first full calendar year after receipt of Deputy Director and any other required approvals, and annually thereafter for the term of the license and any extensions. As part of the fish stocking plan, the Licensees shall stock trout in Project waters as follows:

- Bucks Lake – up to 17,400 pounds of catchable trout;
- Grizzly Forebay – up to 10,000 fingerling trout; and
- Lower Three Lakes and Middle Three Lakes – up to 10,000 fingerling trout.

The species shall be determined on an annual basis. The Licensees shall begin implementation of CDFW's annual stocking prescription (number and species) no later than September 30 of each year. In the event no guidance is received by September 30, the Licensees shall stock the same prescription (number and species) as the previous year.

The Licensees may acquire the fish directly through available sources or enter into a contract with CDFW for the cost of production. In the event the quantities of one or more of the species or sizes of fish listed in this condition are not available, or the fisheries management strategy of the waterbody changes during the term of the FERC license, the Licensees shall coordinate with CDFW to develop a reasonable alternative. The reasonable alternative may include substituting an equivalent quantity of a different trout species, not to exceed the total stocking targets for weight and quantity in this

condition. Trout species selected for stocking shall not impair the water quality or beneficial uses related to native fish¹⁶.

The Licensees shall implement this condition in compliance with: (1) any reasonable and prudent measures contained in a Biological Opinion issued by the USFWS for the Project; and (2) any other applicable permits obtained by the Licensees for fish stocking.

CONDITION 12. Bucks Lake Shoreline Management

The Licensees shall implement the Bucks Lake Shoreline Management Plan, as filed with FERC by PG&E and the City of Santa Clara, on September 19, 2019. Any revisions approved by the Deputy Director shall be incorporated into the plan.

CONDITION 13. Streamflow and Reservoir Level Gaging

The Licensees shall implement the Streamflow and Reservoir Level Gaging Plan, as filed with FERC by PG&E and the City of Santa Clara, on September 20, 2019. Any revisions approved by the Deputy Director shall be incorporated into the plan.

CONDITION 14. Gravel Augmentation

The Licensees shall implement the Gravel Augmentation Plan, as filed with FERC by PG&E and the City of Santa Clara, on September 20, 2019. Any revisions approved by the Deputy Director shall be incorporated into the plan.

CONDITION 15. Aquatic Resources Monitoring

The Licensees shall implement the Aquatic Resources Monitoring Plan, as filed with FERC by PG&E and the City of Santa Clara, on September 20, 2019. Any revisions approved by the Deputy Director shall be incorporated into the plan.

CONDITION 16. Sierra Nevada Yellow-Legged Frog Management

The Licensees shall implement the Sierra Nevada Yellow-Legged Frog Management Plan, as filed with FERC by PG&E and the City of Santa Clara, on September 20, 2019. Any revisions approved by the Deputy Director shall be incorporated into the plan.

CONDITION 17. Aquatic Invasive Species Management

The Licensees shall implement the Aquatic Invasive Species Management Plan, as filed with FERC by PG&E and the City of Santa Clara, on September 20, 2019. Any revisions approved by the Deputy Director shall be incorporated into the plan.

¹⁶ “Fish” as defined in Fish and Game Code section 45 is wild fish, mollusk, crustacean, invertebrate, amphibian, or part, spawn, or ovum of any of those animals.

CONDITION 18. Integrated Vegetation Management

The Licensees shall implement the Integrated Vegetation Management Plan, as filed with FERC by PG&E and the City of Santa Clara, on September 20, 2019. Any revisions approved by the Deputy Director shall be incorporated into the plan.

CONDITION 19. Hazardous Materials Management

The Licensees shall implement the Hazardous Materials Management Plan, as filed with FERC by PG&E and the City of Santa Clara, on September 20, 2019. Any revisions approved by the Deputy Director shall be incorporated into the plan.

CONDITION 20. Erosion Management

The Licensees shall implement the Erosion Management Plan, as filed with FERC by PG&E and the City of Santa Clara, on September 20, 2019. Any revisions approved by the Deputy Director shall be incorporated into the plan.

CONDITION 21. Recreation Management

The Licensees shall implement the Recreation Management Plan, as filed with FERC by PG&E and the City of Santa Clara, on October 3, 2019. Any revisions approved by the Deputy Director shall be incorporated into the plan.

CONDITION 22. Annual Ecological Consultation Group Meeting

The Licensees shall, within 60 days of license issuance, establish an Ecological Consultation Group. ECG meetings shall be open to representatives from the Forest Service, USFWS, CDFW, American Whitewater, Bucks Lake Homeowners Association, State Water Board, and other interested agency representatives, who may fully participate in the meeting. The Licensees shall coordinate meeting agendas with interested agencies. The Licensees shall maintain an ECG e-mail contact list consisting of e-mail addresses (one primary and one alternate) provided to the Licensees by the Relicensing Participants¹⁷ and organizations or individuals that notified the Licensees in writing of their interest in participating in the ECG meetings. Thereafter, the Licensees shall organize and host ECG meetings, and unless otherwise agreed to by the ECG, meetings shall be held in Sacramento or Chico, California.

The Licensees shall organize and host at least one ECG meeting each year by April 15, unless otherwise agreed to by the ECG. The Licensees shall organize and host additional ECG meetings or conference calls if agreed upon by the ECG and the

¹⁷ Relicensing Participants that were involved in the development of PG&E and City of Santa Clara's proposed measures include: Forest Service, USFWS; CDFW; American Whitewater, the Bucks Lake Homeowners Association, and State Water Board staff.

Licensees. Unless otherwise modified by the ECG, the agenda shall at a minimum include the following:

- Introductions;
- Public comments;
- The Licensees' report of any deviations from the conditions in the license since the previous meeting required under this condition;
- Discussion of the Licensees' FERC filings in the previous calendar year (e.g., monitoring reports required by implementation plans);
- Discussion of the Licensees' planned license-required monitoring in the current calendar year;
- Discussion of any license-required agency consultation in the current calendar year, and the Licensees' proposal to complete the consultation, if needed;
- Discussion of any anticipated proposals in the calendar year regarding: (1) changes or additions to facilities or features in the license; (2) variances to conditions in the license; or (3) amendments to the license;
- The Licensees' follow-up on action items from the last meeting required by this condition;
- Other implementation plans and associated reports or results;
- Identification of the Licensees' action items from this meeting, if any; and
- Review of the current lists of special-status species (species that are federally endangered or threatened, or proposed for listing as threatened or endangered under the federal ESA; Forest Service sensitive and Forest Service species of conservation concern; state threatened or endangered or candidate for listing under the California ESA; state species of special concern; state fully protected species, and state rare plants) that occur or have the potential to occur on Project-affected lands and may be affected by Project operation, maintenance, or recreational activities.

At least 30 days in advance of the meeting, the Licensees shall make reports and other information from the previous calendar year required by license conditions or implementation plans in the FERC license available to the ECG.

The ECG members shall work collaboratively to make decisions and resolve issues assigned to the ECG. The ECG will communicate its recommendations to the Forest Service and State Water Board staff. The Forest Service is responsible for final decisions covered by the Section 4(e) Conditions and the State Water Board is responsible for final decisions within its jurisdiction.

CONDITION 23. Dewatering and Diversion

Prior to commencing any work that requires a water diversion or in-water work below the maximum water surface elevation or high water mark, the Licensees shall submit a Dewatering and Diversion Plan to the Deputy Director for review and consideration of approval. The Plan shall be submitted at least 60 days before the anticipated activity is expected to occur. The Deputy Director may require modifications as part of any approval. The Licensees shall not implement any activities associated with the Dewatering and Diversion Plan that may impact water quality or beneficial uses until receipt of Deputy Director and any other required approvals. For Project work that involves any dewatering or diversion of water, the Licensee shall include the following:

- An overview of all in-water work that will require dewatering or diversion of water;
- Time frames for required dewatering or diversion work;
- Description of coffer dams or equivalent barriers that will be used to isolate the construction area from instream flows;
- Description of measures, if needed, that will be implemented to avoid potential fish stranding and entrainment;
- Provisions to maintain downstream flow equal to upstream flow. If temporary modification of minimum instream flows are required, the Licensee shall provide a written description of the modification, reason(s) for its necessity, measures that will be implemented to protect water quality and beneficial uses, and the proposed timeline for modification and return to the required MIFs;
- Proposed monitoring and reporting related to the dewatering, diversion, and turbidity of water; and
- Description of how, upon completion of construction activities, flow will resume with the least disturbance to the substrate, water quality, and beneficial uses.

Unless approved by the Deputy Director in writing, Project activities shall not cause increased turbidity greater than allowable levels identified in the *Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin* (Basin Plan) (Central Valley Regional Board, 2018) and amendments thereto. If turbidity exceedances are expected to result from sediment disturbance related to Project activities despite implementation of all reasonable best management practices, the Licensees shall consult with State Water Board and Central Valley Regional Water Quality Control Board (Central Valley Regional Water Board) staff to determine an allowable zone of dilution in which turbidity in excess of the limits may be allowed. Activities associated with an exception to turbidity limits may not occur without prior written approval from the Deputy Director.

CONDITION 24. Extremely Dry Conditions

In the event of extremely dry conditions, which may include a year in which the Governor of the State of California declares a drought emergency for Plumas County, or

multiple consecutive Dry or Critically Dry water years, the Licensees may request modification of the flow, water surface elevation, and related requirements of this certification. If the Licensees anticipate that they may request modification pursuant to this condition, the Licensees shall notify the Relicensing Participants and the Deputy Director of the Licensees' concerns related to flows as early as possible, and no later than March 15 of the year in which a request may be submitted. If the Licensees request modification pursuant to this condition, the Licensees shall develop a Revised Operations Plan in consultation with Relicensing Participants staff for flows, water surface elevations, and related conditions during the extremely dry conditions.

The Licensees shall provide notice of the proposed Revised Operations Plan to interested parties at least seven days prior to submittal to the Deputy Director. The Licensees' request shall include: an estimate of water to be saved and the alternative beneficial uses for which the water is being conserved; a timeline for the return to regular operations; proposed monitoring for the revised operations, including an estimation of any impacts the revised operations may have on any beneficial uses of water; and proposed water conservation measures that will be implemented. If conservation measures are not applicable, the Licensees shall describe the circumstances and justification for not implementing water conservation measures.

The Licensees shall submit the proposed Revised Operations Plan to the Deputy Director for review and consideration of approval. The Licensees shall also provide a summary of any comments received and how the comments were addressed. The Deputy Director may require modifications to the Revised Operations Plan as part of any approval. The Licensees may implement the Revised Operations Plan upon receipt of Deputy Director and other required approvals, in accordance with the schedule and requirements specified therein. The Licensees shall file with FERC the Deputy Director-approved Revised Operations Plan, and any approved amendments thereto.

CONDITIONS 25 – 50.

CONDITION 25. Any report developed as a condition of this certification shall be submitted to the Deputy Director. The Licensees shall allow the Forest Service, CDFW, USFWS, and State Water Board staff at least 45 days¹⁸ to provide input on the draft report. The Licensees shall file a final report with the Deputy Director within 90 days of providing the draft report to the required entities. The report shall include documentation of consultation with the agencies specified above; copies of their comments and recommendations on the report; and specific descriptions of how the agencies' comments and recommendations are addressed in the report.

¹⁸ Sixty days shall be provided for the Forest Service, State Water Board, USFWS, and CDFW to provide written comments and recommendations on the report on spill management at Grizzly Forebay and Lower Bucks Lake.

CONDITION 26. Any revisions to a management plan included as a condition of this certification¹⁹ shall be submitted to the Deputy Director for review and consideration of approval. If significant changes in the existing conditions or implementation circumstances occur, the Licensees shall allow the required entities²⁰ 60 days to provide written comments and recommendations. After consultation, the Licensees shall file the proposed updated management plan with the Deputy Director for review and consideration of approval. Revisions to a management plan shall include documentation of consultation with required entities; copies of their comments and recommendations on the plan; and specific descriptions of how the required entities' comments and recommendations are addressed in the plan. The Deputy Director may require modifications as part of any approval.

CONDITION 27. The State Water Board's approval authority, including authority delegated to the Deputy Director or others, includes the authority to withhold approval or to require modification of a proposal, plan, or report prior to approval. The State Water Board may take enforcement action if the Licensees fail to provide or implement a required item in a timely manner. If a time extension is needed to submit an item for Deputy Director approval, the Licensees shall submit a written request for the extension, with justification, to the Deputy Director no later than 60 days prior to the deadline. The Licensees shall file with FERC any Deputy Director-approved time extensions. The Licensees shall not implement any plans or reports until after receiving Deputy Director approval and any other necessary regulatory approvals.

CONDITION 28. The State Water Board reserves the authority to add to or modify the conditions of this certification: (1) to incorporate changes in technology, sampling, or methodologies; (2) if monitoring results indicate that continued operation of the Project could violate water quality objectives or impair beneficial uses; (3) to implement any new or revised water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act; (4) to coordinate the operations of this Project and other hydrologically connected water development projects, where coordination of operations is reasonably necessary to meet water quality objectives and protect beneficial uses of water; and (5) to require additional monitoring and/or other measures, as needed, to ensure that continued Project operations meet water quality objectives and protect beneficial uses of Bucks Creek, Grizzly Creek, Milk Ranch Creek, and their tributaries.

CONDITION 29. Future changes in climate projected to occur during the FERC license term may significantly alter the baseline assumptions used to develop the conditions of

¹⁹ In this case, management plan refers to one of the Resource Management Plans submitted to FERC in September and October of 2019 (Conditions 12 – 21), implementation of which are also conditions of this certification.

²⁰ The Recreation Management Plan, Hazardous Materials Management Plan, and Erosion Management Plan require consultation with the Forest Service and State Water Board staff. The remaining plans require consultation with CDFW, USFWS, Forest Service, and State Water Board staff.

this certification. The State Water Board reserves authority to add to or modify the conditions of this certification, to require additional monitoring and/or other measures, as needed, to verify that Project operations meet water quality objectives and protect the beneficial uses assigned to Project-affected stream reaches.

CONDITION 30. The State Water Board shall provide notice and an opportunity to be heard in exercising its authority to add to or modify the conditions of this certification.

CONDITION 31. This certification is contingent on compliance with all applicable requirements of the Basin Plan.

CONDITION 32. Notwithstanding any more specific conditions in this certification, the Project shall be operated in a manner consistent with all water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act. The Licensees shall take all reasonable measures to protect the beneficial uses of Bucks Creek, Grizzly Creek, Milk Ranch Creek, and their tributaries.

CONDITION 33. Unless otherwise specified in this certification or at the request of the Deputy Director, data and/or reports shall be submitted electronically in a format accepted by the State Water Board to facilitate the incorporation of this information into public reports and the State Water Board's water quality database systems in compliance with California Water Code section 13167.

CONDITION 34. This certification does not authorize any act which results in the taking of a threatened, endangered, or candidate species or any act which is now prohibited, or becomes prohibited in the future, under either the California ESA (Fish & G. Code, §§ 2050 – 2097) or the federal ESA (16 U.S.C. §§ 1531 – 1544). If a “take” will result from any act authorized under this certification or water rights held by the Licensees, the Licensees must obtain authorization for the take prior to any construction or operation of the portion of the Project that may result in a take. The Licensees are responsible for meeting all requirements of the applicable ESAs for the Project authorized under this certification.

CONDITION 35. The Licensees shall submit any change to the Project, including operations, facilities, technology changes or upgrades, or methodology, which would have a significant or material effect on the findings, conclusions, or conditions of this certification, to the State Water Board for prior review and written approval. The State Water Board shall determine significance and may require consultation with state and/or federal agencies. If the State Water Board is not notified of a change to the Project, it will be considered a violation of this certification. If such a change would also require submission to FERC, the change must first be submitted and approved by the Executive Director of the State Water Board unless otherwise delegated in this certification or other State Water Board approval.

CONDITION 36. In the event of any violation or threatened violation of the conditions of this certification, the violation or threatened violation is subject to any remedies,

penalties, process, or sanctions as provided for under applicable state or federal law. For the purposes of section 401(d) of the Clean Water Act, the applicability of any state law authorizing remedies, penalties, process, or sanctions for the violation or threatened violation constitutes a limitation necessary to ensure compliance with the water quality standards and other pertinent requirements incorporated into this certification. In response to any violation of the conditions of this certification, the State Water Board may add to or modify the conditions of this certification as appropriate to ensure compliance.

CONDITION 37. In response to a suspected violation of any condition of this certification, the State Water Board or Central Valley Regional Water Board may require the holder of any federal permit or license subject to this certification to furnish, under penalty of perjury, any technical or monitoring reports the State Water Board deems appropriate, provided that the burden, including costs, of the reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. (Wat. Code, §§ 1051, 13165, 13267, and 13383.)

CONDITION 38. This certification shall not be construed as replacement or substitution for any necessary federal, state, and local approvals. The Licensees are responsible for compliance with all applicable federal, state, or local laws or ordinances and shall obtain authorization from applicable regulatory agencies prior to the commencement of Project activities.

CONDITION 39. Any requirement in this certification that refers to an agency whose authorities and responsibilities are transferred to or subsumed by another state or federal agency, will apply equally to the successor agency.

CONDITION 40. Upon request, a construction schedule shall be provided to agency staff. The Licensees shall provide State Water Board and Central Valley Regional Water Board staffs access to Project sites to document compliance with this certification.

CONDITION 41. A copy of this certification shall be provided to any contractor and all subcontractors conducting Project-related work, and copies shall remain in their possession at the Project site(s). The Licensees shall be responsible for work conducted by its contractor, subcontractors, or other persons conducting Project-related work.

CONDITION 42. Onsite containment for storage of chemicals classified as hazardous shall be away from watercourses and include secondary containment and appropriate management as specified in California Code of Regulations, title 27, section 20320.

CONDITION 43. Activities associated with operation and maintenance of the Project that threaten or potentially threaten water quality shall be subject to further review by the Deputy Director and Executive Officer of the Central Valley Regional Water Board.

CONDITION 44. Nothing in this certification shall be construed as State Water Board approval of the validity of any water rights, including pre-1914 claims. The State Water Board has separate authority under the Water Code to investigate and take enforcement action, if necessary, to prevent any unauthorized or threatened unauthorized diversions of water.

CONDITION 45. This certification is subject to modification or revocation upon administrative or judicial review, including but not limited to review and amendment pursuant to California Water Code, section 13330 and California Code of Regulations, title 23, division 3, chapter 28, article 6 (commencing with section 3867).

CONDITION 46. This certification is not intended and shall not be construed to apply to any activity involving a hydroelectric facility and requiring a FERC license or an amendment to a FERC license unless the pertinent application for certification was filed pursuant to California Code of Regulations, title 23, section 3855, subdivision (b) and that application for certification specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

CONDITION 47. This certification is conditioned upon total payment of any fee required under California Code of Regulations, title 23, division 3, chapter 28.

CONDITION 48. When applicable, the Licensee shall comply with the State Water Board's Construction General Permit (State Water Board 2009), and amendments thereto. For any construction and maintenance activities with the potential to impact water quality or beneficial uses that are not subject to the Construction General Permit, the Licensee shall prepare and implement site-specific Water Quality Monitoring and Protection Plans (WQMP Plans) for Deputy Director approval. WQMP Plans must demonstrate compliance with sediment and turbidity water quality objectives in the Basin Plan. The WQMP Plans shall be consistent with the most current Forest Service *National Best Management Practices for Water Quality Management on National Forest System Lands*²¹ and other appropriate documents.

The Licensee shall submit the WQMP Plans to the Deputy Director for review and approval at least 45 days prior to the desired start date of the applicable construction or maintenance activity. The objective of the WQMP Plans shall be to identify and implement control measures for construction, maintenance, or other activities with the potential to cause erosion, stream sedimentation, fugitive dust, soil mass movement, release of hazardous materials, or other water quality impairment.

The WQMP Plans shall be based on actual site geologic, soil, and groundwater conditions, and at a minimum shall include:

²¹ Volume 1: National Core BMP Technical Guide (FS-990a). Issued April 2012. Available online at: <https://www.fs.fed.us/naturalresources/watershed/bmp.shtml>. Last Accessed October 22, 2020.

1. Description of site conditions and the proposed activity;
2. Detailed descriptions, design drawings, and specific topographic locations of all control measures in relation to the proposed activity, which may include:
 - a. Measures to divert runoff away from disturbed land surfaces;
 - b. Measures to collect and filter runoff from disturbed land surfaces, including sediment ponds at the diversion and powerhouse sites; and
 - c. Measures to dissipate energy and prevent erosion;
3. Revegetation measures for disturbed areas, which shall include use of native plants and locally-sourced plants and seeds; and
4. A monitoring, maintenance, and reporting schedule.

The Deputy Director may require modifications as part of any approval. The Licensee shall file with FERC the Deputy Director-approved WQMP Plans, and any approved amendments thereto. The Licensee shall implement the WQMP Plans upon receipt of Deputy Director approval and any other required approvals, in accordance with the schedule and requirements specified therein.

CONDITION 49. The Licensees shall ensure no net loss of wetland or riparian habitat functions and is responsible for their own compliance with the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (State Water Board 2019) and the *California Wetlands Conservation Policy* (Governor's Executive Order W-59-93), and any amendments thereto.

CONDITION 50. The Licensees shall comply with the terms and conditions in the State Water Board's *Statewide National Pollutant Discharge Elimination System Permit for Residual Aquatic Pesticide Discharges to Waters of the United States from Algae and Aquatic Weed Control Applications* (State Water Board Order No. 2013-0002-DWQ and NPDES No. CAG990005, as amended by State Water Board Orders 2014-0078-DWQ, 2015-0029-DWQ, and 2016-0073-EXEC), and ongoing amendments during the life of the Project.



Eileen Sobeck
Executive Director

October 22, 2020

Date

Attachment A - Detailed Project Description

References

- Central Valley Regional Water Quality Control Board (Central Valley Regional Water Board). 2018. ***The Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin (Basin Plan). Fifth Edition. Revised May 2018 (with Approved Amendments).*** Available at: https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201805.pdf. Last Accessed October 21, 2020.
- State Water Board. 2012. *Delegation of Authority to State Water Resources Control Board Members Individually and to the Deputy Director for Water Rights.* Resolution No. 2012-0029. Available at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0029.pdf. Last Accessed October 21, 2020.
- State Water Board. 2017. *Redelegation of Authorities pursuant to Resolution No. 2012-0029.*
- State Water Board. 2006. **State Water Resources Control Board Resolution No. 2006-0079 Approving the Proposed 2006 Federal Clean Water Act Section 303(d) List of Water Quality Limited Segments for California.** Order WR 98-08. Available at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2006/rs2006_0079.pdf. Last Accessed October 21, 2020.
- State Water Board. 2017. **Surface Water Ambient Monitoring Program: Quality Assurance Program Plan.** May 2017. Available at: https://www.waterboards.ca.gov/water_issues/programs/swamp/qapp/swamp_QAPrP_2017_Final.pdf. Last Accessed October 21, 2020.
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- United States Department of Agriculture (USDA) Forest Service. 2012. **National Best Management Practices for Water Quality Management on National Forest System Lands.** Volume 1: National Core BMP Technical Guide. FS-990a. Available at: https://www.fs.fed.us/naturalresources/watershed/pubs/FS_National_Core_BMPs_April2012.pdf. Last Accessed October 21, 2020.

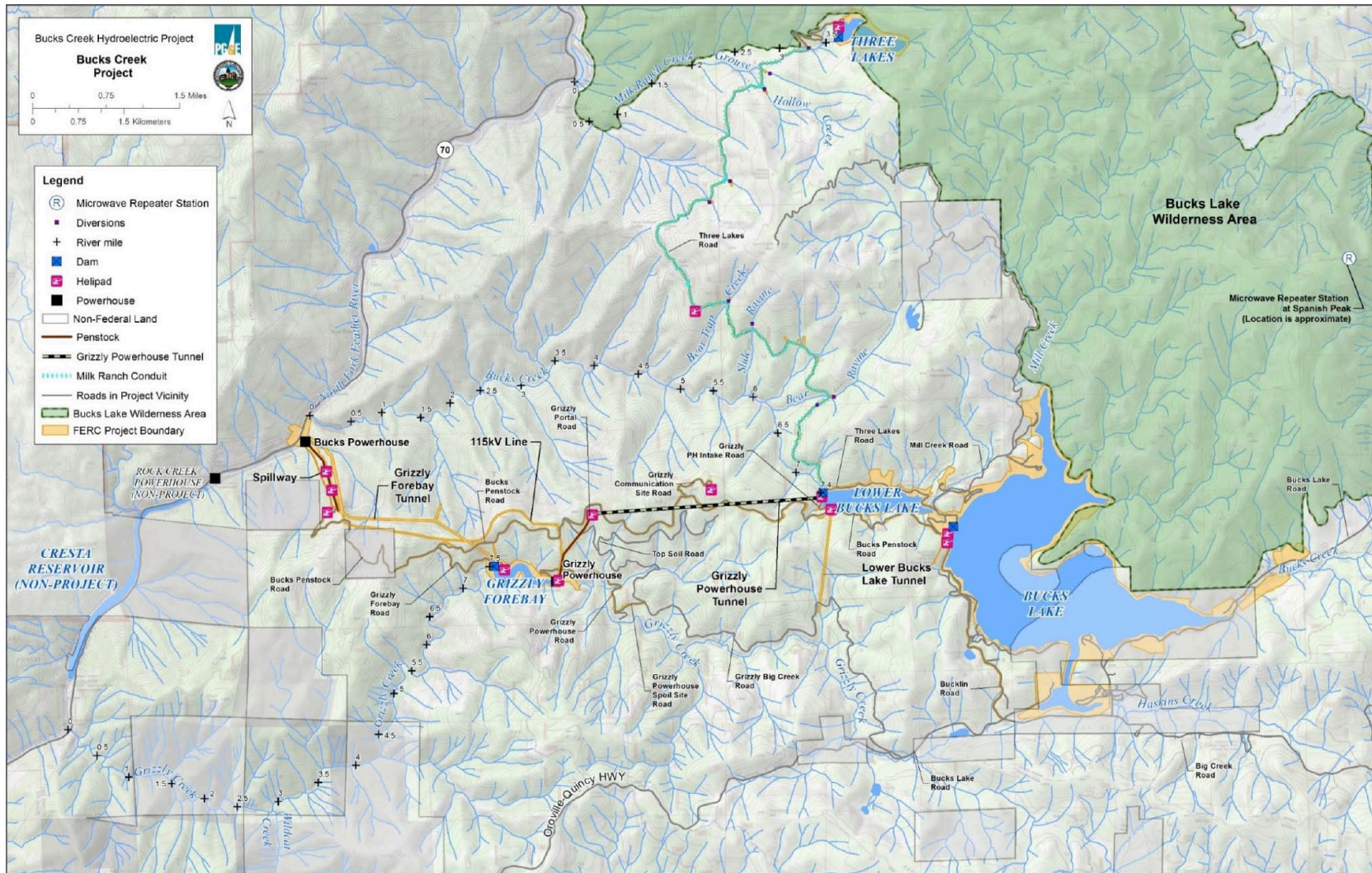


Figure 1. Bucks Creek Hydroelectric Project Facilities

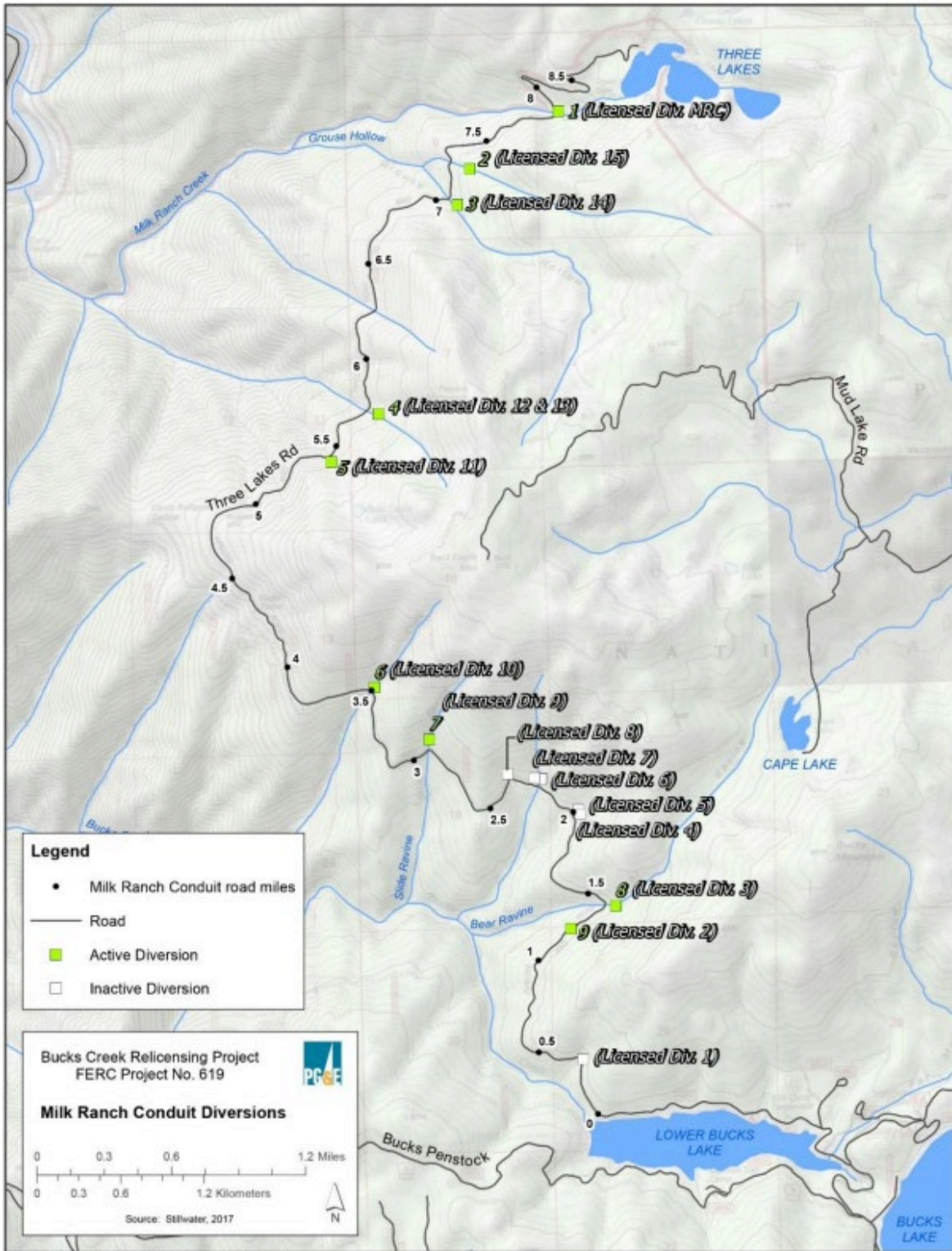


Figure 2. Milk Ranch Conduit Diversions

ATTACHMENT A: DETAILED PROJECT DESCRIPTION

**WATER QUALITY CERTIFICATION
FOR
BUCKS CREEK HYDROELECTRIC PROJECT**

OCTOBER 2020

1.0 Introduction

The Bucks Creek Hydroelectric Project (Project), Federal Energy Regulatory Commission (FERC) Project No. 619 is located in the North Fork Feather River watershed in Plumas County, California. The Project is jointly owned by Pacific Gas and Electric Company (PG&E) and the City of Santa Clara (Santa Clara). The Project has an authorized installed capacity of 84.8 megawatts. The Project is comprised of two developments: (1) Bucks Creek Development; and (2) Grizzly Development.

2.0 Bucks Creek Development

The Bucks Creek Development includes Bucks Lake, Bucks Lake Dam, Three Lakes, Three Lake Dam, Milk Ranch Conduit, Lower Bucks Lake, Lower Bucks Lake Dam, Bucks Powerhouse, Grizzly Forebay, Grizzly Forebay Dam, and Grizzly Forebay Tunnel.

2.1 Bucks Lake and Bucks Lake Dam

Bucks Lake Dam is a rock-filled, concrete-faced structure that is 123-feet-high and 1,320-feet-wide. The dam impounds Bucks Lake, which extends approximately five miles upstream from the dam. Gross water storage in the 1,827-acre reservoir is approximately 105,605 acre-feet (ac-ft) at the normal maximum water surface elevation of approximately 5,157 feet above mean sea level (msl). From Bucks Lake, water is released immediately downstream into a short reach of Bucks Creek before draining into Lower Bucks Lake.

2.2 Three Lakes, Three Lakes Dam, and Milk Ranch Conduit

Lower Lake, Middle Lake, and Upper Lake collectively make up Three Lakes, the highest elevation water body in the Project boundary. Three Lakes Dam impounds Milk Ranch Creek and is a 30-foot-high and 584-foot-wide rock-filled structure. Although all three lakes are hydraulically separate during low flow conditions, the crest of Three Lakes Dam rises above the maximum water surface elevation of Lower Lake and Middle Lake and converges the lower two lakes into one larger lake. Upper Lake always remains hydraulically separate as its maximum water surface elevation is approximately 36 feet above the crest of Three Lakes Dam. Gross storage in the 40-acre compound reservoir is approximately 605 ac-ft at the normal maximum water surface elevation of approximately 6,077.8 feet msl. From Three Lakes, water is released into Milk Ranch Conduit before draining into Lower Bucks Lake. A total of approximately 15 named and unnamed tributaries¹ contribute additional flow to Milk Ranch Conduit between Three Lakes Dam and Lower Bucks Lake. The maximum capacity of the approximately 8-mile-long conduit is about 70 cubic feet per second (cfs).

¹ The named tributaries include North Fork Grouse Hollow Creek, South Fork Grouse Hollow Creek, Bear Trap Creek, Slide Ravine, and Bear Ravine.

2.3 Lower Bucks Lake and Lower Bucks Lake Dam

Lower Bucks Lake Dam is a concrete arch dam that is 99-feet-high and 500-feet-wide. The dam impounds Lower Bucks Lake, which extends approximately 1.1 miles upstream from the dam. Gross storage in the 136-acre reservoir is approximately 5,843 ac-ft at the normal maximum water surface elevation of approximately 5,022 feet above msl. Water is conveyed from Lower Bucks Lake to the Grizzly Powerhouse by the Grizzly Powerhouse Tunnel. Both the Grizzly Powerhouse and Grizzly Powerhouse Tunnel are part of the Grizzly Development (discussed below).

2.4 Grizzly Forebay and Grizzly Forebay Dam

The Grizzly Forebay is impounded by a concrete arch dam that is 98-feet-high by 520-feet-wide. Grizzly Forebay extends approximately 0.8-mile upstream from Grizzly Forebay Dam. Gross storage in the 38-acre reservoir is approximately 1,112 ac-ft at the normal maximum water surface elevation of approximately 4,316 feet above msl.

2.5 Grizzly Forebay Tunnel

Flow is conveyed through the U-shaped Grizzly Forebay Tunnel to Bucks Powerhouse. The tunnel is 9,575-feet-long with two 4,786-foot-long penstocks leading to Bucks Powerhouse. The maximum flow capacity is 400 cfs.

2.6 Bucks Powerhouse

Bucks Powerhouse is a 47-foot-long by 132-foot-wide, steel-frame and reinforced concrete building. The powerhouse contains two double-overhung impulse turbines that each have a rated output of 40,000 horsepower (hp). In addition, the powerhouse includes two revolving field generators that have a total maximum capacity of 65 megawatts (MW). The normal maximum gross head of Bucks Powerhouse is 2,558 feet, with an average annual generation production of 234.8 gigawatt hours (GWh). There are no project transmission lines at the Bucks Powerhouse because it connects directly to an adjacent non-project switchyard that is part of the interconnected transmission system. Bucks Powerhouse releases all flow to the North Fork Feather River one mile upstream of Rock Powerhouse, which is part of PG&E's Rock Creek-Cresta Hydroelectric Project (FERC Project No. 1962) and is operated under a separate FERC license.

3.0 Grizzly Development

The Grizzly Development is located downstream of Lower Bucks Lake and upstream of the Bucks Powerhouse. Completed in 1993, the Grizzly Development is composed of the Grizzly Powerhouse Tunnel and the Grizzly Powerhouse.

3.1 Grizzly Powerhouse Tunnel

The 12,320-foot-long, 11- to 14-foot-diameter Grizzly Powerhouse Tunnel (including a 4,900-foot-long, 4.5- to 8-foot-diameter buried penstock leading to Grizzly Powerhouse) conveys flow from Lower Bucks Lake to Grizzly Powerhouse. The maximum flow capacity is 400 cfs.

3.2 Grizzly Powerhouse

The Grizzly Powerhouse is a 65-foot-long by 55-foot-wide, steel-frame and concrete building that contains one vertical Francis turbine with a rated output of 19.7 MW and one synchronous generator with a maximum capacity of 19.8 MW. The normal maximum gross head of Grizzly Powerhouse is 719 feet with an average annual generation production of 48.9 GWh. Grizzly Powerhouse discharges directly into Grizzly Forebay. A 4.2-mile-long, 115-kilovolt (kV) transmission line transmits power from Grizzly Powerhouse to PG&E's 115-kV Caribou-Sycamore Transmission Line.